

Assessment and Diagnosis of Asperger Syndrome

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Introduction

Since the release of the first edition of this book, much has changed in the field. The title of this chapter, while seemingly unremarkable, is wrapped in controversy. The title implies that Asperger syndrome is so different from autism that assessment of Asperger's would require a completely unique process. While evaluation of Asperger's requires some specific skills and training, there are commonalities to providing quality evaluation regardless of where the individual may be on the spectrum.

The mere notion that there are meaningful differences between autism and Asperger's has been hotly debated since it was first included in the two prominent diagnostic systems – the International Classification of Diseases, 10th edition (ICD-10; World Health Organization [WHO], 1993), and the Diagnostic and Statistical Manual, Fourth Edition (DSM-IV; American Psychiatric Association [APA], 1994). These resources provide criteria for making diagnoses and give professionals a common language. Since the introduction of Asperger's as a diagnosis, clinicians have found the criteria to be confusing. As a result of confusion in using the diagnostic criteria, many clinicians have ignored the DSM (Klin, McPartland, & Volkmar, 2005). Some have avoided the use of any diagnostic term altogether – preferring to use an alternative, unofficial term “autism spectrum disorder” (ASD) for Asperger's and similar disorders – known as pervasive developmental disorders. Another common approach has been to reserve the diagnostic term “autism” for cases

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that clearly meet the criteria for autistic disorder and to use the term “ASD” for all other presentations (combining all other subtypes such as Asperger’s). Other clinicians who have used the term Asperger’s have based the decision on factors other than the DSM criteria. For example, they have assigned the diagnosis based on intellectual ability (i.e., average to above average), age (e.g., adults), level of functioning (e.g., work, communication, and social), and “mild” impact (Klin et al., 2005).

Difficulties with consistent utilization of the DSM are further complicated by the diagnostic tools themselves. Few instruments that are linked to DSM criteria for Asperger syndrome exist. Klin (2009) points out that several of the prominent ASD diagnostic tools that are based on the DSM-IV, the ADI-R (Rutter, Le Couteur, & Lord, 2003), and the Autism Diagnostic Observation Schedule (ADOS; Lord, Rutter, DiLavore, & Risi, 2003) provide diagnostic outcomes only for autism or ASD and avoid Asperger’s entirely.

Due to confusion regarding the definition of Asperger syndrome (AS), clinicians have not used the diagnostic term consistently. Because one of the main benefits of using diagnoses is enhanced communication for the purpose of research and treatment, failure to consistently apply the term has resulted in a communication breakdown. Simply put, despite the existence of the DSM and ICD, professionals continue to disagree about the definition of Asperger’s. This has real consequences for researchers and clinicians alike. For example, in research, it is often important to build on the work of others. It may not be possible to generalize results from one researcher to another because the diagnosis of AS was defined differently. Clinicians who use research in their practice struggle to draw meaningful conclusions from the literature for the same reason. Moreover, one professional cannot rely on the diagnostic conclusions of another because he or she may be working from a different “playbook.” Using the same language is essential. In order to be useful, diagnostic terms must carry the same meaning across settings.

The diagnosis of AS has failed to prove meaningful in studies on its validity. Researchers have been unsuccessful in identifying factors that readily differentiate high-functioning autism from AS based on factors such as patterns of intellectual skills and language abilities (Bennett et al., 2008; Kamp-Becker et al., 2010; Macintosh & Dissanayake, 2004; Ozonoff & Griffith, 2000; Volkmar & Klin, 2000). These findings lend support for viewing autism as a spectrum (Wing, 1986, 2000) rather than as a disorder with distinct subtypes.

Due to factors such as confusion with current diagnostic criteria and questions regarding the validity of AS, the DSM (DSM-5) has merged the subtypes (autistic disorder, pervasive developmental disorder not otherwise specified, Asperger syndrome, and childhood disintegrative disorder) into a single category called “autism spectrum disorder” (APA, 2013). It is important to note that the diagnosis of Asperger syndrome may continue to be part of the upcoming ICD-11 (WHO, n.d.). Regardless of the diagnostic term used (autism spectrum disorder or Asperger syndrome), clinicians who conduct evaluations must have expertise in identifying higher-functioning individuals with autism spectrum disorder because the impact of the disorder is significant, and the need for appropriate intervention and services is great.

Knowledge and Experience

Evaluation of ASD requires knowledge and experience. Quality assessment requires skilled evaluators who have a deep knowledge of ASD. Professionals who are not competent are more likely to misdiagnose their clients and to create unnecessary delays in identification and treatment. “The consequences of a missed or late diagnosis include social isolation, peer rejection, lowered grades, and a greater risk for mental health and behavioral distress such as anxiety and depression during adolescence and adulthood” (Wilkinson, 2008, p.3). The challenges of those with ASD are heightened when they remain unidentified and therefore unaddressed. This occurs all too often – especially for individuals who are high in functioning, such as those with AS. In particular, girls are most at risk of being under-identified (Attwood, 2006). Professionals seeking to gain the necessary skills must work closely with experienced and knowledgeable colleagues until they develop competence. Professionals with expertise in ASD help to avoid delays and misdiagnosis.

Assessment of AS may be completed by a number of professions; however, the field of training does not indicate the knowledge base of the professional as it pertains to ASD. One cannot say that because a practitioner is a neurologist, psychologist, or psychiatrist that he or she is an expert in ASD. There are professionals in many fields who are knowledgeable in ASD and able to conduct a valid assessment and those for whom this is not a strength. *The field of the professional is less important than the expertise—that can only be acquired through training and experience.* Extensive literature exists regarding the best instruments and techniques for identifying ASD; however, even the best instruments are meaningless when those who use them do not have the training and experience to make accurate judgments.

Because the two diagnostic systems, the DSM and ICD, included descriptions of classic forms of autism well before the inclusion of Asperger’s, many professionals gained expertise in recognizing classic autism yet did not develop expertise in identifying higher-functioning ASD. As a matter of fact, a strong background in classic forms of ASD sometimes may interfere with the ability to recognize other manifestations of autism. With training and experience, one can learn to see the whole spectrum. While there are commonalities of individuals across the spectrum, a broad range of presentations exists. Indeed, Dr. Stephen Shore, an adult and author with ASD, says, “If you’ve met one person with autism, you’ve met *one* person with autism” (September 29, 2011, personal communication). Moreover, the range becomes wider as the level of functioning increases (see Fig. 1). It is important for professionals involved in the assessment of ASD to have training and experience, not just with ASD but with the specific level of functioning of the individuals they evaluate.

The term “medical diagnosis” is sometimes mistakenly used in reference to ASD. The term is inappropriate because *medical diagnosis of autism is in an experimental phase and does not exist in practice.* There are no medical tests that can be used to determine if an individual has an ASD (Autism Society, n.d.). Because the term “medical diagnosis” has been used so widely, many have mistakenly

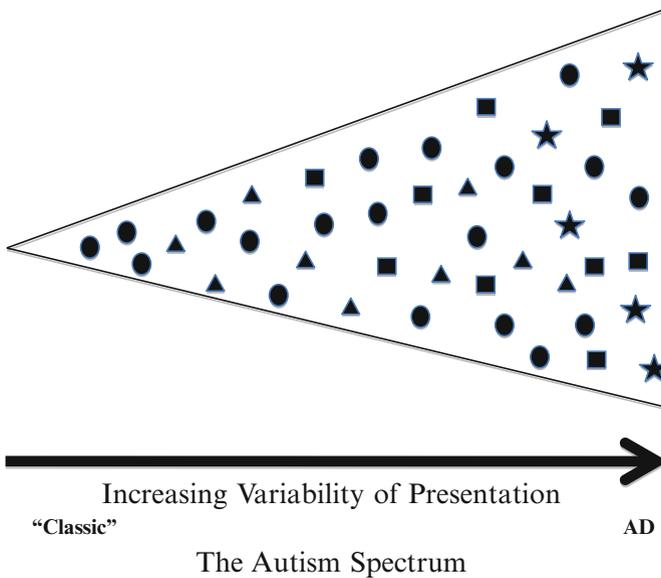


Fig. 1 Variability of ASD (Adapted from Rosenn, 1997)

concluded that a medical professional is required in order to make the diagnosis. In fact, in the absence of significant medical concerns, many specialized teams do not require staff with medical training (Aspy & Grossman, 2007).

Gender is also a factor in the identification of those with Asperger's. The gender ratios across the spectrum indicate that all forms of ASD are more prevalent among males than among females (Anello et al., 2009; Fombonne, 2003). This discrepancy, which becomes more pronounced as the level of functioning increases (i.e., fewer females in the higher-functioning population), may reflect actual gender differences in prevalence. Alternatively, it may reflect diagnostic challenges in identifying ASD in higher-functioning females. These challenges may have resulted, in part, from the fact that early descriptions of autism and AS and the diagnostic criteria were both based primarily on male clients. AS in higher-functioning females is often not recognized until much later than is typical of males with a similar level of functioning (Wilkinson, 2008). Professionals who participate in the assessment of ASD must have the training and experience necessary for recognizing the manifestations of AS in females.

Assessment of AS, like all pervasive developmental disorders, requires evaluation across a number of areas of functioning necessitating the use of an experienced team (Klin et al., 2005; Klin, Sparrow, Marans, Carter, & Volkmar, 2000; National Research Council [NRC], 2001). Areas required for a quality assessment of AS are listed in Table 1. It is clear from the scope of the assessment that a number of professionals must be involved to address all areas.

Professionals in fields including psychology, speech language pathology, psychiatry, education, pediatrics, occupational therapy, neurology, vocational

Table 1 Areas required for assessment of AS (Grossman et al., [in press](#))

Psychological and behavioral

- Developmental history (e.g., birth history, family history, developmental milestones, significant life events)
- Health history
- Adaptive functioning (e.g., socialization, communication, motor skills, daily living skills, community living skills)
- Psychosocial factors (e.g., coexisting psychological disorders, social skills, emotion regulation)

Cognitive and academic

- Intellectual functioning
- Academic achievement

Language and communication

- Articulation
- Expressive language (e.g., syntax, MLU, pronouns, requesting, echolalia, function of language, appropriateness to situation, vocabulary use, use of nonverbal language)
- Fluency
- Pragmatic language (e.g., conversation, reciprocity, initiation, commenting, closing a conversation, greeting and salutation, social/conversational perspective taking)
- Receptive language (e.g., answering questions, following directions, understanding word meaning, understanding nonverbal language)

Sensory and motor

- Sensory processing (e.g., visual, tactile, auditory)
- Motor performance (e.g., muscle tone, gross and fine motor skills, handwriting, gait, repetitive or stereotyped movements)

rehabilitation, and social work may be valuable team members (Johnson, Myers, & The Council on Children With Disabilities, 2007; Klin & Volkmar, 2003). As emphasized above, along with the expertise in his or her own field, at least some of the team members must also have expertise in ASD. Freeman and Cronin describe this high level of training and experience for assessment team members as “mandatory” (Freeman & Cronin, 2002, p. 4). This standard is echoed by the American Academy of Pediatrics in the best practice guidelines that state, “Ideally, the definitive diagnosis of an ASD should be made by a team ... of specialists with expertise in ASDs” (Johnson et al., 2007, p. 1202).

While the title of this chapter is *Assessment and Diagnosis of Asperger Syndrome*, public schools do not use the term “diagnosis.” Rather, evaluation in the public schools results in identification of a “disability” and determination of “eligibility” based on categories outlined by federal law, not the Diagnostic and Statistical Manual (American Psychiatric Association [APA], 2000). Table 2 summarizes the main differences between eligibility and diagnosis.

While the education system and the private arena have different procedures, terminology, and goals, the necessity for trained and experienced evaluation team members remains the same. Whether evaluating to determine diagnosis, or to determine eligibility for special education services, the process involves considering the same characteristics of ASD outlined in different formats. Regardless of the setting, the ability to recognize the presence and impact of these characteristics requires advanced knowledge and skills that

Table 2 Eligibility versus diagnosis (Grossman et al., [in press](#))

Eligibility	Diagnosis
Based on federal law (IDEA)	Based on a set of criteria (e.g., DSM-IV-TR, ICD-10)
Refers to a broad disability category	Refers to a specific disorder (e.g., autistic disorder, Asperger disorder)
Used only in public school system	Used in private settings
Must be determined by a team	May be determined by an individual or a team

develop through training and experience. The difference in terminology—diagnosis vs. disability—does not reflect a difference in the necessary level of expertise. (Grossman, Aspy, & Myles, [in press](#))

In summary, evaluation of AS is complex and requires a comprehensive evaluation by a team of trained and experienced professionals.

Challenges in Identifying Asperger Syndrome

What makes evaluation of AS different from evaluation of classic autism? The average age of diagnosis is 4.5 years for those with classic autism (Centers for Disease Control and Prevention, 2009) and 11 years for those with AS (Howlin & Asgharian, 1999). This is true because, most often, classic autism is relatively easy to recognize in both males and females. Those with classic forms of autism often experience delays in meeting developmental milestones, such as emergence of first words or playing social baby games (peekaboo), and frequently display significant cognitive delays. In contrast, individuals with AS may be harder to detect and have greater variation in their early development. While the development of speech may not be delayed, for example, the *use* of language is impaired (e.g., individual does not know how to start a conversation or dominates a conversation). It is not uncommon to hear that an initial conversation with an individual with AS was “delightful and interesting.” Indeed, the conversation was delightful and interesting; however, the perspective changes after the same “conversation” is held each day for 2 weeks. As often occurs in AS, conversations, especially those on topics of special interest, may be repeated. In fact, the language used when discussing special interests will often appear more “typical” than language on other topics. A trained eye is necessary in order to detect these more subtle yet meaningful differences.

Individuals with AS may or may not display significant developmental delays. Some display both significant delays and advanced skills. For example, it is not uncommon for children, who are later diagnosed with AS, to learn to read earlier than do most of their same-aged peers or to develop an impressive vocabulary for their young age. Because symptoms are more difficult to detect, there is more room for error – especially when clinicians lack the training and experience with this unique group. Loveland ([n.d.](#)) discusses common errors that prevent accurate diagnosis of AS. The errors and potential solutions are summarized in Table 3.

Table 3 Common errors in judgment in the diagnosis of AS and associated solutions (Adapted from Loveland, (n.d.)

Errors	Solution(s)
<i>Diagnostic overshadowing:</i> characteristics of another disorder are evident and mistakenly used to explain the complete diagnostic picture	Trained and experienced teams are able to readily differentiate between ASD and other conditions. They are also able to recognize when ASD occurs along with another disorder
<i>Unremarkable developmental milestones:</i> when developmental milestones are met in a typical time frame, other significant differences (e.g., tantrums, repetitive behaviors) may mistakenly be dismissed	Trained and experienced teams recognize that not all differences associated with ASD are developmental in nature. Experienced teams are also aware that individuals with AS often present with a typical pattern of development in a number of areas
<i>Strong cognitive ability:</i> those with average to above average intelligence often learn to compensate for their differences – especially in familiar situations. The characteristics of ASD often are not apparent until the individual is no longer able to compensate	Trained and experienced teams are able to recognize compensating strategies such as use of scripts, humor, and imitation. They adapt the testing to identify masked limitations
<i>Strong interest in social interaction:</i> an individual with AS may have friends or desire social interaction yet not have the social understanding or social competence that would be expected at his or her age “He’s so social he cannot have AS”	Trained and experienced teams know that individuals with AS may have a strong desire for social interaction yet lack the skills to interact successfully. There is a widespread misbelief that individuals with AS are loners. Klin and Volkmar state that persons with AS who are socially isolated are not loners by choice (1995)
<i>Lack of stereotypical signs:</i> the individual does not display some behaviors often seen in individuals with ASD. “She looks just like everybody else”	Trained and experienced teams know that ASD is a pattern of symptoms and is not defined by the presence or absence of any single characteristic
<i>Lack of significant disruptive behaviors:</i> often, significant difficulties are dismissed or explained away when they are not disruptive. This is one of the reasons that fewer females are referred	Trained and experienced teams know that individuals who do not exhibit disruptive behaviors may have AS

In summary, assessment of AS has a different set of challenges from evaluation of more classic forms of autism. Never in the evaluation process is training and experience more critical than with this population. Evaluation of AS requires a unique set of skills and specialized knowledge.

Evaluation Procedures

Required elements for evaluation of ASD were provided in Table 1. In order to gather and provide information in each of these areas, the evaluation team conducts interviews and observations, administers specific measures, interprets findings, prepares a detailed report, and provides feedback.

Interviews. Interviews provide a deep and rich picture of an individual in a way that no other aspect of an evaluation can. A detailed developmental history, health history, and social and communication functioning are topics readily explored. Interviews help to identify strengths and needs of the client and to clarify concerns to address in the report recommendations. The evaluation team may interview parents, teachers, practitioners, and the person who is the focus of the evaluation. When evaluating adults suspected of having ASD, it may not be possible to access parent information. Siblings and friends may be alternative informants of this early history.

Parent/Guardian Interview: An interview with the parent/guardian is necessary to gather background information and health history. Historical information helps clinicians to differentiate one disorder from another. For example, even though AS is often not diagnosed until later, some core symptoms should be apparent from an early age. If a client presents with symptoms, such as social isolation that first emerges at 17 years following the death of a sibling, a clinician can rule out ASD because the pattern is not consistent, and there may be a better explanation for the symptoms (i.e., recent significant event). The parent/guardian interview also helps to identify concerns for the evaluators to address (e.g., making friends, learning job skills).

Diagnostic Client Interview: Interviewing the person of focus is a critical component of a comprehensive AS evaluation. In many respects, the interview is actually a specialized observation – one that affords the evaluation team the opportunity for direct interaction with the client. During the interview, it is helpful for the team members to keep in mind the common errors in judgment (summarized earlier in Table 2) that may lead to the failure to recognize AS. Effective team members will identify strengths that may be present – for example, good eye contact, excellent manners, and a sense of humor. A strong evaluation team understands that no single behavior or characteristic, including strengths, can be used to rule in or rule out a diagnosis of AS. Well-trained team members will also recognize behaviors that may be subtle but important signs of AS – such as talking at length about a special interest, not understanding the humor used by others, or taking a figurative comment literally.

Other Interviews: The evaluation team often gathers information through interviews of other individuals or groups of professionals who work with the person who is being evaluated. For example, teachers, administrators, physicians, and speech pathologists may provide critical information. Moreover, professionals who have had input into the evaluation are often more receptive to following through with the recommended strategies.

Observations. In contrast to a disorder that can be identified with a medical test, ASD is a clinical diagnosis meaning that it must be determined through observation by knowledgeable and experienced professionals. "... Accurate diagnosis must be based on observation of the individual's communication, behavior and developmental levels" (Autism Society, n.d.). While interviews provide clinicians with an

account of others' observations, it is critical that the evaluation team members conduct their own observations. When assessing children, it is important to observe in both structured and less structured environments (e.g., classroom, recess, lunch).

Observations of clients are made even before the evaluation session begins. Examples of important observations that may be made as the individual enters the session are as follows:

- Displays repetitive patterns in speech – rigidly repeating a lengthy formal greeting to each of four examiners
- Displays intense preoccupations and/or is absorbed in own unique interests – immediately asking – “Do you have a cat?” “What time does the garbage truck come to your house?” or “How much did that watch cost?”
- Makes an unusual response to praise – responding to the compliment “That is such a great shirt” with “Yes”

There are a number of assessment measures that help to create opportunities for the evaluation team to observe behaviors necessary for diagnosis of ASD. For young children, play-based activities are often utilized, while conversation tasks are used for older children, adolescents, and adults. Table 4 lists domains of behavior to be observed during the evaluation and examples of each. The domains and examples are based on the Underlying Characteristics Checklist (Aspy & Grossman, 2008).

Specific examples of behaviors and characteristics of AS that may be observed during the evaluation session itself are as follows:

- Becomes less responsive following loud sounds – giving more detailed answers to questions asked in a quiet voice than to those asked more loudly
- Exhibits literal interpretation of words – responding to the question “What does your father look like when he is angry?” with “A little bit taller than my mother”
- Displays repetitive movements – intermittently making a slight grimace

Additional observations may be made outside the testing session in the home, school, or vocational setting or in the community. Observing clients in multiple settings at school, for example, can provide a rich picture of the individual and his or her strengths and needs. Direct observations lead to a better understanding of the client and to more targeted and individualized recommendations.

An important step in understanding observations is to notice if the person's behavior is the same in different settings. Is the behavior in the office consistent with parent and teacher reports? Did the behavior appear to be different during the school day? Both consistency and inconsistency in observations are meaningful for a number of reasons. Knowing whether or not a person has skills and is able to use those skills across settings (i.e., generalize) can impact both diagnostic decisions and treatment. Tables 5 and 6 list inconsistencies and consistencies in behavior that may be part of the diagnostic pattern of AS.

Observation of skill deficits across settings suggests a true lack of ability. In contrast, some clients display skills in some, but not all settings suggesting that skills have not generalized. Analyzing these differences may lead to a better understanding of environmental supports that facilitate success.

Table 4 Examples of behaviors to observe during a clinical evaluation of ASD (Aspy & Grossman, 2008)

Domains	Behaviors to observe
Social	Has difficulty recognizing the thoughts and feelings of others Uses eye contact in an atypical manner Has difficulty waiting turn Responds to praise in an unusual way
Restricted patterns of behavior, interests, and activities	Exhibits ritualistic behaviors Displays intense preoccupations and/or is absorbed in own unique interests Repeats words or sounds Exhibits problems handling transitions
Communication	Uses hand and arm gestures in an atypical manner Displays repetitive patterns in speech Fails to initiate conversation Has difficulty remaining on topic (especially when not related to special interest) Exhibits literal interpretation of words
Sensory differences	Displays repetitive movements (e.g., rocking, finger posturing) Covers ears in response to sounds Becomes less responsive following loud sounds Over- or underreacts to smells or touch
Cognitive differences	Displays extensive knowledge in narrow area of interest Has difficulty attending to task Has difficulty with problem-solving tasks
Motor differences	Displays atypical muscle tone (e.g., becomes fatigued when sitting in a chair) Exhibits atypical or random movements Displays awkward gait Has difficulty starting or stopping a movement
Emotional vulnerability	Displays rage reactions Appears to be sad Appears to be anxious
Medical and biological	Displays atypical activity level Exhibits difficulties with hearing or vision

Table 5 Inconsistencies in behavior that may be part of the diagnostic pattern of AS

Domains	Behavior A	Behavior B
Communication and restricted interests	Easily discusses train schedules	Has difficulty talking about feeling sad
Social	Plays easily with adults or older children	Watches peers play but does not join them
Social and emotional vulnerability	Tells jokes	Cannot tell when others are kidding

Table 6 Consistent behaviors that may be part of the diagnostic pattern of AS

Domain	Behavior A	Behavior B
Sensory	Startles when the air conditioning comes on at home	Sits as far away from the copy machine at work as is possible
Communication	Interrupts when spouse talks	Interrupts when evaluation team member talks
Cognitive (organizational)	Cannot find shoes and needs help almost every morning	Cannot find work materials and is often late finishing projects

Table 7 Formal measures of Asperger syndrome

Asperger Syndrome Diagnostic Scale (Myles, Bock, & Simpson, 2001)
Autism Diagnostic Interview-Revised (Lord, Rutter, & LeCouteur, 1994)
Autism Diagnostic Observation Schedule (Lord et al., 2003)
Monteiro Interview Guidelines for Diagnosing Asperger’s Syndrome (Monteiro, 2008)

Measures. A number of measures that assist in the diagnosis of Asperger’s exist. While the format of tests vary (e.g., checklist, interview, observation), it is important to note that no single measure or procedure can be used to diagnose autism spectrum disorder; rather, diagnosis can only be made by synthesizing and analyzing information from a variety of sources. Good clinicians recognize that tests are simply tools used to *assist* in diagnosis. There are no tests that can substitute for clinical experience and judgment.

Evaluators must carefully select measures based on information about the client (e.g., level of verbal communication skills, cognitive level, attention span, and motor skills). Improper selection of measures will have a negative impact on evaluation outcomes. For example, the Autism Behavior Checklist (Krug, Arick, & Almond, 2008) is designed to screen for “classic” autism. A negative result (suggesting that the individual does not have autism) on the ABC would not be very informative, and could even be misleading, when evaluating an individual suspected of having AS.

A distinction is made between “formal” and “informal” measures. Formal measures are those that have undergone extensive development and research by test publishers to support their use in evaluating ASD. Formal measures provide scores and norms with which to interpret test results. Examples of formal measures are listed in Table 7. In contrast, informal measures are not produced by a publisher. Often, clinicians develop their own measures, such as use of pictures of social situations or descriptions of social scenarios. Client’s responses are recorded and analyzed based on clinical experience and training. A brief description of results from an informal measure administered to an adult is provided in Fig. 2. A final category of measures, known as research measures, exists. These instruments are developed by professionals in the academic and scientific community. While many of the tools are well researched,

Lori was shown depictions of social situations and asked to describe what was happening and how the people were feeling. The pictures are static representations of people who are expressing strong emotions. The most clear facial expressions were misinterpreted by Lori. The general nature of the emotions were consistently misidentified as well. For example, one picture depicted a boy and a man who were eating corn. The boy appeared to be sad, because the older man took the last piece of corn off the plate, while the man appeared to be happy because he had another piece of corn. The corn, central to the picture, was overlooked completely in her response. Lori described a “possibly spoiled brat” at a “luncheon.” She gave a vague description of the feelings expressed- “upset over some type of issue,” indicating that she saw some of the details, but was not able to form a meaningful “whole” in order to interpret the interpersonal nature of the situations depicted.

Fig. 2 Description of response from an informal measure administered to an adult (Grossman et al., [in press](#))

they are not published or sold by a company. Examples include Reading the Mind in the Eyes (Baron-Cohen, Wheelwright, Hill, Raste, & Plumb, 2001) and the Childhood Asperger Syndrome Test (Scott, Baron-Cohen, Bolton, & Brayne, 2002).

Diagnostic Decision Making and Report Writing

Before a report is written, a team must review all the information and make decisions regarding diagnosis/eligibility and recommendations. Assessment results must be interpreted by qualified professionals. It is not possible to rule in or rule out an ASD or to determine recommendations based on a single test; rather, all results, including interviews, observations, and measures, must be considered. Interpretation is complex. At times, data may be consistent, resulting in a relatively straightforward decision. Other times, assessment data are complicated and may seem contradictory. Clinical judgment is the key to this process. Clinical judgment is the use of professional experience and training to interpret data and to make recommendations. The process of interpretation is best accomplished by a team – the most valuable tool in the evaluation process.

One complicating factor in making diagnostic decisions is the overlap of symptoms from other disorders. For example, people with AS often share some characteristics of inattention, anxiety, and obsessive-compulsive behaviors. Clinicians must be able to differentiate AS from other disorders. While AS has unique characteristics, it can be confused with other disorders – especially by team members with less training and experience.

Another complicating factor often present is the existence of more than one disorder. Indeed, the presence of additional disorders is “to be expected” in autism (Gillberg & Billstedt, 2000, p. 327). One study found that 72 % of individuals diagnosed with ASD have an additional disorder such as depression or anxiety (Gjevik, Eldevik, Fjaeran-Granum, & Sponheim, 2011). This means that it is not an either-or situation. An individual who has AS may have another disorder. Alternatively, the presence of a psychological disorder does not preclude a diagnosis of AS.

Another complicating factor in the decision-making process is the age of the individual. Some evaluators take what they describe as a “conservative” approach to diagnosis of AS – especially for young clients. According to these evaluators, when obvious concerns are observed, it is better to “wait and see” than to make a diagnosis. The opposite is actually true. It is actually riskier to delay a diagnosis and needed services when the characteristics are present. The American Academy of Pediatrics is opposed to this approach and recommends diagnosis/identification when symptoms are present (Johnson et al., 2007, p. 1202). “Evaluators should feel no guilt when identifying and diagnosing ASD – rather they should feel comfort in knowing that they are helping to provide the family and client with critical information and directing them toward needed services and support” (Grossman et al., *in press*).

Recommendations

The two main purposes of a report are to (1) provide diagnostic or identification information and (2) to make recommendations for needed supports, strategies, and interventions. The recommendations are the most important part of a report. Strong recommendations can have a lasting impact on the individual with ASD.

Sample report recommendations for an individual with AS are provided in Table 8. The first column of the table contains items from the Underlying Characteristics Checklist-High Functioning (UCC-HF; Aspy & Grossman, 2008), and accompanying recommendations are listed in the second column. The UCC-HF is an instrument used to identify behaviors and needs related to ASD for the purpose of intervention (not diagnosis). It is ideal for quickly summarizing concerns to address as illustrated in Table 8. Sample recommendations are provided in the second column. This approach helps to ensure that the recommendations actually tie to the specific needs of the individual. Too often, teams fall into the bad habit of “recycling” generic recommendations. Instead, recommendations should be specific and

Table 8 Sample report recommendations (Grossman et al., [in press](#))

UCC-HF item	Sample recommendations
4. Lacks tact or appears rude	<p>Make a video of him in actual interactions – point out how others respond to his statements/questions, labeling their facial expressions and tone of voice. Keep list of comments/behaviors that are acceptable to others, or that make them feel good, and a separate list of comments/behaviors that others thought were rude. A T-chart may be useful</p> <p>Point out times that people laugh and times that people do not laugh (expected/unexpected). Have him identify appropriate times to laugh in role play, story, or video</p> <p>Use “social autopsies” following any bullying episode. This is a strategy where each part of a situation is analyzed in order to understand what went wrong</p>
6. Has difficulty joining an activity	<p>Prior to engagement in social activities (and during social activities), consider sensory modifications, such as chewing gum and sipping from a bottle of water, in environments known to be stressful</p>
18. Has problems handling transition and change	<p>An individualized daily schedule is a critical tool for successful transitioning. Include on the schedule the plan for coping with new activities. Prepare for changes in routine using the visual schedule (calendar). Note aspects of the change that are important to him and practice coping skills. Identify a peer who is available to support him in each situation</p> <p>Practice skills for coping with change, reinforce for successful imitation or demonstration of skills</p> <p>Prime just before change – remind that it is ok and briefly review coping options</p> <p>Use a sensory diet, built into the daily routine and included in visual schedule</p>
63. Has difficulty understanding the connection between behavior and resulting consequences	<p>School staff and parents should recognize that difficulty anticipating consequences is a symptom of ASD. He requires instruction in this area. He needs help to understand how others will likely feel and respond if he behaves a certain way</p> <p>Social narratives, video, and cartooning are helpful visual supports. For example, cartooning can be used to help him to understand the connection between behaviors and consequences</p> <p>Emphasize the “expected” and “unexpected” behaviors and how his behaviors make others think and feel (he needs to understand the “why”). Teach a 5-point scale as a visual guide for responses</p>

targeted for the individual’s situation and needs. One excellent personalized recommendation that is tied to the underlying characteristics of AS is of more value than 20 “boilerplate” recommendations.

Feedback

After the report is completed, the team is not finished. A written report cannot substitute for a person-to-person feedback session. Evaluators must acknowledge and be responsive to the feelings and perspectives of the individuals who are receiving

the feedback. This can only be accomplished during an in-person session. The goals of the feedback session are to review evaluation findings, answer questions, discuss concerns, and plan interventions.

Summary/Conclusions

A comprehensive autism spectrum evaluation should include a developmental history, observations, direct interaction, interviews, and evaluation of functioning in the following areas: psychological/behavioral, cognitive/academic, language/communication, and sensory/motor. The most critical element of an evaluation is the participation of well-trained and experienced evaluation team members. The expertise of the team is far more important than the specific instruments used in the evaluation. A thorough assessment leads to more accurate conclusions and to comprehensive treatment decisions. The results of the AS evaluation should be summarized in a written report and include specific and meaningful recommendations. The evaluation should be followed by a face-to-face feedback session.

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