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Relevant Disclosure

- Co-author of Assessment of Autism Spectrum Disorders text (Guilford, 2009).
- Compensated speaker.

Goals

- Briefly discuss the historical theories of Autism Spectrum Disorders (ASD).
- Define ASD and new DSM 5 criteria.
- Briefly discuss symptoms of ASD by age.
- Briefly discuss a core theory of ASD.
- Briefly review hypothesized causes.
- Discuss data from the ASRS, the largest epidemiological/standardization sample collected of normal children and those with ASD.
- Discuss the ASRS and other methods for assessment, diagnosis and treatment of autism.
- Discuss issues of diagnosis versus eligibility.
We are social beings.

What Benefits Do We Derive From Socialization?

- Support
- Survival
- Affiliation
- Pleasure
- Procreation
- Knowledge
- Friendship

The social development of autistic children is qualitatively different from other children.
In normal children perceptual, affective and neuroregulatory mechanisms predispose young infants to engage in social interaction from very early on in their lives.

Socialization Begins Early
Reina and Her Mother
Adrian, my seatmate on a recent flight.

Hello!

Adrian

You look like an interesting guy.

See what I can do! Wanna take me home?
Where are Autism’s Roots?

- In the bible?
- In ancient cultures?
- In history?
- In religion?
- Portrayed in art?
Les âges de l’ouvrier

Léon FRÉDÉRIC 1895

Is this child portrayed as autistic?
Autism’s First Child

A Brief Current Research Update of ASD and Transition to Adulthood
Epidemiology of Autism Spectrum Disorders in Adults in the Community in England


September 2019: 8 pages, 759/713

Background

The epidemiology of autism in adults has relied on estimated prevalence using childhood research. This study aimed to estimate the prevalence of autism spectrum disorders in adults using a community-based survey.

Method

A community-based diagnostic assessment of adults with autism spectrum disorders (ASD) was conducted in a major urban area in England. The sample included 15,000 adults aged 18 years and older, selected by systematic random sampling, stratifying by age and gender.

Results

The prevalence of autism spectrum disorders in adults in England was 1 in 150 (95% CI: 1.16-1.88). The prevalence was higher in men than women (1 in 120 vs. 1 in 178). The highest prevalence was found in the 25-54 age group (1 in 60). The prevalence increased with age, with the highest prevalence in those aged 55 and over (1 in 30).

Conclusion

The prevalence of autism spectrum disorders in adults in England is higher than previously estimated, with the highest prevalence in men and older age groups. Further research is needed to understand the factors contributing to this higher prevalence.

Epidemiology of autism in adults across age groups and ability levels


September 2019: 8 pages, 759/713

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The prevalence of autism spectrum disorders in adults in England is higher than previously estimated, with the highest prevalence in men and older age groups. Further research is needed to understand the factors contributing to this higher prevalence.
Psychometric Evaluation of Social Cognitive Measures for Adults with Autism

Katherine L. Martinson,1,2 Amy E. Pichlmaier,3,4 Skylar Sichterman,5,6 Lindsey Ludwig,7,8 David L. Pierre,9 and Noah J. Lauren

Although social cognition is frequently evaluated as a target in clinical trials and psychosocial interventions for adults with autism spectrum disorder (ASD), there are only a few validated or normative measures for adults with ASD. This study assessed the psychometric properties of various social cognitive tasks that operate at the domains of executive functioning, social perception, and emotional understanding. These tasks included the Social Cognition in Autism Test (SOCAT), the Social Cognition in Autism Battery (SCAB), the Social Cognition in Autism Scales (SCAS), the Social Cognition in Autism Scale-Revised (SCAS-R), and the Theory of Mind in Autism Scale (TMAS). The results suggest that these tasks share common features but also have unique characteristics. Furthermore, the tasks appear to be sensitive to change in social cognition over time. The findings provide a novel framework for understanding the psychometric properties of social cognitive tasks and suggest potential targets for future research.

ABSTRACT

The costs of services and employment outcomes achieved by adults with autism in the US

Robert Evert Cimber
Richard J. Cowan

This article examines the costs of services and employment outcomes achieved by adults with autism within the United States. It was found that the number of such individuals has increased by more than 20% since 2010. This growth has been driven by several factors, including an increase in the number of diagnosed cases and improvements in diagnostic practices. The study also found that adults with autism are among the most costly individuals to serve. The costs of services and employment outcomes achieved by adults with autism in the US.
Employment and adults with autism spectrum disorders: Challenges and strategies for success

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Accepted: 2007

Abstract: Individuals with autism spectrum disorder (ASD) have the ability to work, but more often than not, they do not have the necessary skills to find employment. Research on interventions that improve employment success for this group is limited. This study determined the impact of a workplace training program on the employment success of adults with ASD. A randomized controlled trial was conducted with 90 adults with ASD. The control group received vocational training, while the experimental group received vocational training and a workplace training program. The workplace training program included training in job skills, social skills, and problem-solving skills. The results of the study indicate that the workplace training program had a positive impact on the employment success of adults with ASD. The study also identified several strategies that can be used to improve the employment success of adults with ASD. These strategies include providing job coaching, offering ongoing support, and providing opportunities for social interaction.

Keywords: Autism, ASD, employment, adults with autism

Employment and Post-Secondary Educational Activities for Young Adults with Autism Spectrum Disorders During the Transition to Adulthood

John Lantos, TSK, et al.

Author's Information: TSK and TMS are authors on this article.

Abstract: This paper describes the post-secondary educational and occupational activities for 68 young adults with autism spectrum disorders who had recently entered the post-secondary school system. Analysis indicated low rates of employment in the community, with the majority of young adults (85%) working in sheltered workshops or day activity centers. Young adults with ASD without an intellectual disability were three times more likely to have a degree or certificate in a career in which they were interested than adults with ASD who had an intellectual disability. Differences in behavior functioning were observed between employment by activity group. The findings suggest that the current service system may be inadequate to accommodate the needs of youth with ASD who do not have intellectual disabilities during the transition to adulthood.

Keywords: Transition to adulthood, Employment, Post-secondary education, Autism spectrum disorders
Some people with autism have abnormalities at a specific site on the 16th chromosome known as 16p11.2. Deletion or duplication of a small piece of chromosome at this site is one of the most common identified genetic causes of autism spectrum disorder.
Assessment of ASD

- High levels of co-morbidity require a comprehensive assessment including: intellect, neuropsychological abilities, achievement, emotional status, personality and protective factors.
- A careful history is essential.
- Well developed, reliable and valid measures must be used to the extent they are available.
- DSM 5 or ICD 10 criteria must be met.

Making the Diagnosis of ASD

- Meets DSM 5 Criteria.
- Coping behaviors assessed.
- Co-morbid behaviors and disorders assessed.
- Corroborating data obtained about child and adulthood.
- Intellectual, achievement and neuropsychological data collected if warranted.

Determining IDIEA Eligibility of Autism

- Autism, as defined by the Individuals with Disabilities Education Act (IDEA), refers to "a developmental disability significantly affecting verbal and nonverbal communication and social interaction, generally evident before age three, that adversely affects a child's educational performance."
- This federal definition then proceeds to name traits commonly related to the condition: "Other characteristics often associated with autism are engaging in repetitive activities and stereotyped movements, resistance to environmental change or change in daily routines, and unusual responses to sensory experiences."
- The term autism does not apply if the child’s educational performance is adversely affected primarily because the child has an emotional disturbance, as defined in [IDEA]."
- IDEA rounds out its definition by noting that a child who shows the characteristics of autism after age three is diagnosed as having autism if the criteria above are satisfied. This enables a child who shows signs of autism after age three to receive services under this classification if he or she develops signs of autism after age three.
- Typically a psychiatrist, clinical psychologist, physician or other highly qualified professional makes the diagnosis. It would not be uncommon for the evaluation team to suspect Autism, then ask the parent to see a psychiatrist, clinical psychologist or appropriately trained pediatrician.
Students that have a DSM or ICD diagnosis are not automatically eligible for special education services, according to the Individuals with Disabilities Education Improvement Act (IDEIA).

Educational eligibility and subsequent services are determined by conducting assessments and testing performed by a school’s multidisciplinary team and not that of medical diagnostic tests. These can include observations, history, developmental information, behavior information and a documented prevalence over a period of time.

Core DSM and ICD Core ASD Symptoms in All Ages

- Impaired social relations.
- Impaired communication skills.
- Impaired behavior.
Symptoms Present Before 24 Months

Children with ASD Struggle to:

- Orient to name
- Attend to human voice
- Look at face and eyes of others
- Imitate
- Show objects
- Point
- Demonstrate interest in other children

Symptoms Present Before 36 Months

Children with ASD:

- Use of other’s body to communicate or as a tool
- Stereotyped hand/finger/body mannerisms
- Ritualistic behavior
- Failure to demonstrate pretend play
- Failure to demonstrate joint attention

DSM 5 Autism Spectrum Disorder

- Combined social and communication categories.
- Tightened required criteria reducing the number of symptom combinations leading to a diagnosis.
- Omitted Retts and Childhood Disintegrative Disorders.
- Clarifies co-morbidity issues.
- Eliminated PDD NOS and Aspergers in favor of Autism Spectrum Disorder.
- Created Social Pragmatic Communication Disorder.
- Still no specified profile for adults, just guidelines.
DSM 5 Autism Spectrum Disorder

- Five criteria.
- Seven sets of symptoms in the first two criteria – Social/Communication and Restrictive/Repetitive behaviors, interests or activities.
- All three symptoms are required to meet the first criteria (although a typo omits this).
- Two out of four are needed for the second criteria.
- Some symptoms have been combined.
- Sensory sensitivity has been added.

DSM 5 ASD Criteria 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 abnormal social eye contact and body language or deficits in understanding and use of gestures; or use of eye contact as a means to elicit help; to total lack of facial expressions and nonverbal communication.
3. Deficits in developing, maintaining, and understanding relationships, ranging, for example, from difficulty adjusting behavior to suit various social contexts; to difficulties in sharing imaginative play or in making friends; to absence of interest in peers.

DSM 5 ASD Criteria B

Restricted, 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 stereotypes, lining up toys or flapping objects, echolalia, idiosyncratic phrases).
2. Insistence on sameness, inflexible adherence to routines, or ritualized patterns of behavior. Some examples include the following:
   a. A preoccupation with objects or activities that are unusual (e.g., collecting bars of soap not used every day).
3. Highly restricted, fixated interests that are unusual in intensity or focus (e.g., strong preoccupation with wildly improbable or unrealistic ideas or fantasies).
4. Hyper- or hypo-reactivity to sensory input or unusual interest in sensory aspects of the environment (e.g., repeated or idiosyncratic patterns of hand or body movements, pressure or resistance to being touched or dressed, unusual responses to sound or light).

5. Hypervigilance when voring or playing, when by history, or unusual interest in sensory aspects of the environment (e.g., apparent indifference to being touched or dressed, unusual or inappropriately intense reactions to sound, light, or movement).
DSM 5 Autism Spectrum Disorder

- Specify if:
  - With or without accompanying intellectual impairment.
  - With or without accompanying language impairment.
  - Associated with a known medical or genetic condition or environmental factor.
  - Associated with another neurodevelopmental, mental, or behavioral disorder.
  - With catatonia.

DSM 5 ASD Criteria C, D, E.

C. Symptoms must be present in the early developmental period (but may not become fully evident 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 co-morbid diagnoses of autism spectrum disorder and intellectual disability, social communication should be below that expected for general developmental level.

The Three Functional Levels of Autism

- **ASD Level 1**
  - Requiring Support
  - Difficulty initiating social interactions
  - Organization and planning problems can hamper independence

- **ASD Level 2**
  - Requiring Substantial Support
  - Social interactions limited to narrow special interests
  - Frequent restricted/repetitive behaviors

- **ASD Level 3**
  - Requiring Very Substantial Support
  - Severe deficits in verbal and nonverbal social communication skills
  - Great distress/difficulty changing actions or focus
Applying DSM 5 With Adults (page 54)

• "Many adults with ASD without intellectual or language disabilities learn to suppress repetitive behavior in public."
• "Special interests may be a source of pleasure and motivation and provide avenues for education and vocation later in life."
• "Diagnostic criteria may be met when restricted, repetitive patterns of behavior, interests or activities were clearly present during childhood. . . even if symptoms are no longer present."
• "Among adults with ASD with fluent language, the difficulty in coordinating non-verbal communication with speech may give the impression of add, wooden or exaggerated body language."

Applying DSM 5 With Adults (page 56-57)

• Symptoms are “clear in the developmental period.”
• “In later life interventions or compensations, as well as current supports, may mask these difficulties in at least some contexts.”
• “However symptoms remain sufficient to cause current impairment in social, occupational or other important areas of functioning.”
• “ASD is diagnosed four times more often in males than females.”
• “Girls without accompanying intellectual impairment or language delays may go unrecognized.”

DSM IV TR Autism and Asperger Syndrome

Data from the Autism Spectrum Rating Scales Epidemiologic Sample (2009)
Lorna Wing: Godmother of Autism

Autism vs. Asperger

- ASRS means for ages 2-5 years were typically somewhat higher for children with Autism than those with Asperger’s syndrome.
- Exception being Unusual Behaviors where the two groups were similar
- ASRS means for ages 6-18 years were consistently higher for children with Autism than those with Asperger’s syndrome.

Autism vs Asperger (2-5 years)
**Autism vs Asperger (6-18 Years)**

**DSM 5 Social (Pragmatic) Communication Disorder Criteria A**

Persistent difficulties in the social use of verbal and nonverbal communication as manifested by all of the following:

- Deficits in using communication for social purposes, such as greeting and sharing information, in a manner that is appropriate for the social context.
- Impairment of the ability to change communication to match context or the needs of the listener, such as speaking differently in a classroom than on a playground, talking differently to a child than to an adult, and avoiding use of overly formal language.
- Difficulties following rules for conversation and storytelling, such as taking turns in conversation, rephrasing when misunderstood, and knowing how to use verbal and nonverbal signals to regulate interaction.
- Difficulties understanding what is not explicitly stated (e.g., making inferences) and non-literal or ambiguous meanings of language (e.g., idioms, humor, metaphors, multiple meanings that depend on the context for interpretation).
DSM 5 Social (Pragmatic) Communication Disorder Criteria B, C, and D

B. The deficits result in functional limitations in effective communication, social participation, social relationships, academic achievement, or occupational performance, individually or in combination.

C. The onset of the symptoms is in the early developmental period (but deficits may not become fully manifest until social communication demands exceed the child’s capabilities).

D. The symptoms are not attributable to another medical or neurological condition or to low abilities in the domains of word structure and grammar, and are not better explained by autism spectrum disorder, intellectual disability (intellectual developmental disorder), global developmental delay, or another mental disorder.

NO DISCUSSION OF THIS DIAGNOSIS IN ADULTS!
**Downloadable Tests**

Various tests have been developed by ARC for use in the course of our research. Some of these tests are available here for download.

You are welcome to download these tests provided that they are used for genuine research purposes, and provided due acknowledgement of ARC as the source is given.

Translations

If you have translated any of the ARC tests, and wish to help others by making them available, please contact the author, or our website for further details.

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**Cambridge Behavioural Scale**

1. Can easily get along with other children.
   - Never
   - Rarely
   - Sometimes
   - Often
   - Always

2. Has many friends.
   - Never
   - Rarely
   - Sometimes
   - Often
   - Always

3. Often brings things home from school.
   - Never
   - Rarely
   - Sometimes
   - Often
   - Always

4. Has difficulties in explaining about things.
   - Never
   - Rarely
   - Sometimes
   - Often
   - Always

5. I am good at telling stories.
   - Never
   - Rarely
   - Sometimes
   - Often
   - Always

6. I get on very well with other people.
   - Never
   - Rarely
   - Sometimes
   - Often
   - Always

7. I try to make new friends.
   - Never
   - Rarely
   - Sometimes
   - Often
   - Always

8. I am good at making friends.
   - Never
   - Rarely
   - Sometimes
   - Often
   - Always

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**Website Links**

- [https://www.autismresearchcentre.com/arc_tests](https://www.autismresearchcentre.com/arc_tests)
Autism Spectrum Disorder as Reflected in the Autism Spectrum Rating Scales (Goldstein and Naglieri, 2009) Exploratory and Confirmatory Factor Analyses

Validity of the Factors

• Factor analysis is a valuable tool to understand how items group.
• But we also need to know if the items have validity, that is do they measure what they purport to measure?
• Discriminating individuals with ASD from the regular population is important.
• Discriminating individuals with ASD from those who are not in the regular population (e.g. they suffer from other conditions) but not ASD is equally important.

ASRS Profiles

• A scale like the ASRS should differentiate adults with ASD from the normal population.
• Comparison to regular individuals should demonstrate that those with ASD have high scores.
• Comparisons to other clinical groups should also show differences from those with ASD.
• Comparisons of the ASD to regular and other clinical samples provides an essential examination of validity.
ASRS Validity for ages 2-5

ASRS Validity: Ages 6-18 Parents

ASRS Validity: Ages 6-18 Teachers
The ASRS now has a DSM 5 scale as well as scoring options for non-verbal children.

Autism is increasingly referred to as a spectrum disorder in which individuals can present problems ranging from total impairment to near reasonable functioning.

In a Spectrum Disorder genetic and phenotypic factors predispose certain individuals to express certain Central Nervous System vulnerabilities leading to poorly adapted variations in development and behavior.
In a Spectrum Disorder all symptoms are considered relevant to the extent they present in each disorder. Thus a symptom is not exclusive to a disorder.

The form that a Spectrum Disorder assumes is determined by its composite symptoms. These symptoms often have complex relationships.

Meet Kevin
Pretend Play in Autism

- Limited, often absent
- When present usually characterized by: repetitive themes, rigidity, isolated acts, one-sided play, limited imagination.
Evaluating Compensatory Behaviors: Social Camouflage in ASD

- Social camouflaging is defined as the use of strategies by autistic people to minimize the challenges of autism during social situations (Lai et al. 2011).
- Social camouflage has recently been a focus of researchers, but has been recognized by clinicians as coping strategies. It is now recommended that clinicians evaluate masking or coping behaviors when assessing autism in the newly released 11th edition of the International Classification of Diseases (Zeldovich 2017).
- This phenomena may be a widespread in ASD, especially in intellectually strong individuals.

Social Camouflage in ASD

- Social camouflaging reflects an explicit effort to ‘mask’ or ‘compensate’ for autistic characteristics; and to use conscious techniques to minimize an autistic behavioral presentation (Hull et al. 2017; Lai et al. 2017; Livingston and Happé 2017).
- Examples of camouflaging behaviors described in the current literature include as example: forcing oneself to make eye contact during a social interaction; pretending that one is doing so by looking at the space between someone’s eyes or at the tip of their nose; or using working memory strategies to develop a list of appropriate topics for conversation.

Social Camouflage in ASD: Unanswered Questions

- Do autistic females camouflage more than males, and does this partly account for gender disparities in the rate and timing of diagnosis (Begeer et al. 2013; Loomes et al. 2017)?
- What is the relationship between camouflaging and mental health outcomes?
- How should camouflaging be accurately measured? Is a discrepancy method sufficient to assess the the gap between how a person with ASD mediates their internal autistic status and their overt behavior (external autistic presentation)?
Measuring Social Camouflage

Livingston and Happé (2017) suggest that camouflaging is a component of social compensation.

The “processes contributing to improved behavioral presentation of a neurodevelopmental disorder such as ASD, despite persisting core deficit(s) at cognitive and/or neurobiological levels”.

As such they should be measured at the behavioral, cognitive, and even neurobiological levels.

Performance on tests of cognition relevant to autism, or scores on self-reported measures of autism traits can only serve as a proxy measure of internal autistic status.

Measuring Social Camouflage

- An alternative to the discrepancy approaches is one based on observational recognition of camouflaging; measuring the specific behaviors and experiences which represent camouflaging.
- Observational/reflective methods circumvent the limitation of being unable to measure an individual’s internal autistic state. Camouflaging can be measured consistently and compared between individuals, and behaviors can be identified regardless of how successful they may be.
- This approach to camouflaging has the advantage of allowing for variation in camouflaging behaviors and their success. Techniques learned and used in some situations may not be successful in others.
- An individual’s overall camouflaging skill may partly depend on their flexibility/generalizable capacity to adapt to different situations.
Measuring Social Camouflage

- Both the discrepancy and observational/reflective approaches offer ways to define and measure camouflaging in ASD.
- All the methods used or suggested have their own strengths and weaknesses, thus combining multiple methods may allow for greater accuracy in measuring and identifying a complex phenomenon such as camouflaging.

Camouflaging Autistic Traits Questionnaire (CAT-Q)

- Compensation
- Masking
- Assimilation

Social Camouflage: Compensation

- Copy others facial expression or body language.
- Learn social clues from media.
- Watch others to understand social skills.
- Repeat others phrasing and tone.
- Use script in social situations.
- Explicitly research the rules of social engagement.

Social Camouflage: Masking

• Monitor face and body to appear relaxed.
• Adjust face and body to appear relaxed.
• Monitor face and body to appear interested in others.
• Adjust face and body to appear interested in others.
• Pressured to make eye contact.
• Think about impression made on others.
• Aware of impression made on others.

Social Camouflage: Assimilation

• Feel a need to put on an act.
• Conversation with others is not natural.
• Avoid interacting with others in social situations.
• “Performing” e.g. not being oneself in social situations
• Force self to interact with others.
• Pretending to be normal.
• Need support of others to socialize.
• Cannot be oneself while socializing.

Importance of a National Norm

• Sample was stratified by
  • Sex, age, race/ethnicity, parental education level (PEL; for cases rated by parents), geographic region
  • Race/ethnicity of the child (Asian/Pacific Islander, Black/African American/African Canadian, Hispanic, White/Caucasian, Multi-racial by the rater
  • Parents provided PEL of both parents
  • the higher of the two levels was used to classify the parental education level of the child
  • All raters completed the ASRS via the paper-and-pencil or online methods.
Importance of a National Norm

<table>
<thead>
<tr>
<th>ASRS Standardization Samples by Age and Rater</th>
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<tbody>
<tr>
<td>Age Groups</td>
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<tr>
<td>2 - 5 Years</td>
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<tr>
<td>6 - 11 Years</td>
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<tr>
<td>12 - 18 Years</td>
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<td>Sub Total n</td>
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<td>TOTAL N</td>
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</table>

Note: at ages 2-16 years there were 80 subjects (40 girls and 40 boys) per one year age group. At ages 17-18 there were 80 subjects (40 girls and 40 boys) across this two year interval.

Importance of a National Norm

- Validity samples were collected
- A single primary diagnosis was indicated
- A qualified professional (e.g., psychiatrist, psychologist) had made the diagnosis
- Criteria were made using DSM-IV-TR or ICD-10
- Clinical samples include:
  - ASD (N = 580)
  - ADHD (N = 250)
  - Communication Delay (N = 180)
  - Developmental Delay (N = 140)
  - Anxiety / Depression (N = 100)

ASRS Reliability
### ASRS Reliability Ages 2-5 Parents & Teachers (or caregivers)

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<thead>
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<th>Scale</th>
<th>Parent Ratings</th>
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<th>Teacher Ratings</th>
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<tr>
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<td>Clinical Sample (N=10)</td>
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<td>Total Score</td>
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### ASRS Reliability Ages 6-18 : Parents

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<td>20</td>
<td>20</td>
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<tr>
<td>Hyperactivity</td>
<td>68</td>
<td>72</td>
<td>70</td>
<td>74</td>
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<tr>
<td>Peer Sociability</td>
<td>50</td>
<td>50</td>
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<tr>
<td>Social Refusal</td>
<td>90</td>
<td>90</td>
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<td>90</td>
</tr>
<tr>
<td>Sleep/Language</td>
<td>66</td>
<td>70</td>
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<td>78</td>
</tr>
<tr>
<td>Delinquency</td>
<td>37</td>
<td>35</td>
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<tr>
<td>Aggression</td>
<td>94</td>
<td>94</td>
<td>94</td>
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<tr>
<td>Emotional Dysregulation</td>
<td>75</td>
<td>73</td>
<td>74</td>
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</table>

### ASRS Reliability Ages 6-18 : Teachers

<table>
<thead>
<tr>
<th>Scale</th>
<th>6 to 11 Years</th>
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<th>12 to 18 Years</th>
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<tbody>
<tr>
<td></td>
<td>Normative Sample (N=40)</td>
<td>Clinical Sample (N=10)</td>
<td>Average</td>
<td>Normative Sample (N=40)</td>
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<td>Total Score</td>
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<tr>
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<tr>
<td>Inattention</td>
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<td>37</td>
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<tr>
<td>Hyperactivity</td>
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<td>59</td>
<td>59</td>
<td>59</td>
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<tr>
<td>Peer Sociability</td>
<td>49</td>
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<tr>
<td>Social Refusal</td>
<td>96</td>
<td>96</td>
<td>96</td>
<td>96</td>
</tr>
<tr>
<td>Sleep/Language</td>
<td>69</td>
<td>70</td>
<td>69</td>
<td>69</td>
</tr>
<tr>
<td>Delinquency</td>
<td>30</td>
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</tr>
<tr>
<td>Aggression</td>
<td>95</td>
<td>95</td>
<td>95</td>
<td>95</td>
</tr>
<tr>
<td>Emotional Dysregulation</td>
<td>76</td>
<td>76</td>
<td>76</td>
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</tr>
</tbody>
</table>
ASD vs Communication Disorders

Race / Ethnic Differences
ASRS Race Ethnic Differences

Race Ethnic Differences Short Form

Intervention
- Despite strong claims no curative treatment has been studied vigorously.
- “In the absence of a definitive cure there are a thousand treatments” (Klin).
- Behavior modification, educational intervention and pharmacology have been studied.
Considering Co-morbidity

- Considerable overlap exists between autism spectrum disorder (ASD) and mental health disorders.
- High rates of overlap are significant because they affect the nature and type of problems displayed by persons with ASD and how the disorders are assessed.
- ADHD, anxiety disorders and depression are among the disorders most commonly associated with ASD.
- Symptom presentation is similar whether ASD occurs alone or with other conditions.
- Multiple assessments after initial diagnosis of ASD are frequently necessary.
- ASD can be diagnosed very early, while symptoms of other disorders emerge at different points in human development.
Components of an Effective Treatment Program

- Structured behavioral treatment
- Parent involvement
- Treatment at an early age
- Intensive intervention
- Social skill development
- Focus on generalization of skills
- Appropriate school setting
- Medication?

Medications

- Symptom focused medications: stimulants for attention, anti-depressants for mood, anti-psychotics for "oddities".
- Condition focused medications?

New Drug May Treat ASD

Research on animal models of fragile X syndrome supports the ENFIS, a stimulant, and later a novel antipsychotic drug called ENFIS, both of which were shown to improve social behaviors in animal models. ENFIS was tested in a double-blind, placebo-controlled clinical trial in 63 subjects with FXS aged 8 to 18 years, with full results in the NEJM paper on May 25, 2023. The primary endpoint was the change in social interaction and communication scores on the ABC, Social Aversion, and Fear of Social Situations subscales. ENFIS was well tolerated, with no new side effects. A follow-up study was published in the May 2023 issue of the American Journal of Geriatric Psychiatry. ENFIS was developed by a team of researchers at the University of California, San Francisco. It is currently in development for potential use in humans with FXS.
Psychostimulants for ADHD-like symptoms in individuals with autism spectrum disorders.

Cortese S, Castelnau P, Morcillo C, Roux S, Bonnet-Brilhault F. Institute for Pediatric Neuroscience, NYU Child Study Center, Langone Medical Center, 111 East 21st Avenue, 14th Floor, New York, NY 10016, USA. samuele.cortese@gmail.com.


We conducted a comprehensive review of studies assessing the efficacy and tolerability of psychostimulants for ADHD-like symptoms in individuals with autism spectrum disorder (ASD) encompassing autism disorder, Asperger's syndrome, pervasive developmental disorders not otherwise specified. PubMed, Ovid, EMBASE, Web of Science, ERIC and CINHAL were searched through January 2012. From a pool of 348 potentially relevant references, 12 citations (11 studies) were retained as pertinent. Four of the included studies had a randomized controlled design. None of the studies assessed methylphenidate immediate release. Despite these study limitations, some support the results of the studies using methylphenidate extended-release. Most of the studies assessing methylphenidate immediate release included trials with inadequate randomization and small sample size. Most of the studies assessing methylphenidate extended-release included trials with inadequate randomization and small sample size. We discuss future directions in the field, including the need to have randomized more ecologically sensitive and optimized treatment strategies tailored to the specific individual features.

Positive Effects of Methylphenidate on Social Communication and Self-Regulation in Children with Pervasive Developmental Disorders and Hyperactivity

Journal of Autism and Developmental Disorders, 2009)

Drugs that increase serotonin transmission may be useful in reducing interfering repetitive behaviors and aggression as well as improving social relatedness (few controlled studies).
Promoting Social Behavior With Oxytocin in High-Functioning Autism Spectrum Disorders

- Published (2/10) online in the Proceedings of the National Academy of Sciences.
- Oxytocin is a hormone known to promote mother-infant bonds.
- A French research group investigated the behavioral effects of oxytocin in 13 subjects with autism.
- Under oxytocin, children with ASD responded more strongly to others and exhibited more appropriate social behavior and affect, suggesting a therapeutic potential of oxytocin through its action on a core dimension of autism.

Oxytocin May Have Many Effects

Medication and Parent Training in Children With Pervasive Developmental Disorders and Serious Behavior Problems: Results From a Randomized Clinical Trial

MICHAEL G. AMAN, PH.D., CHRISTOPHER M. McCOLGUE, M.D. et al.

Conclusions: Medication plus PT resulted in greater reduction of serious maladaptive behavior than Medication alone in children with PDDs, with a lower risperidone dose.
Some Possible Challenges to Counseling Youth With ASD

- Concrete thinkers
- Difficulty with humor
- Problems regulating affect
- Difficulty interpreting other’s feelings
- Rule bound
- Diminished empathy
- Decreased desire to please others.
The first randomized, controlled trial for comprehensive autism treatment for children as young as 18 months old.

While certainly not a cure for the condition, the study did find that intense early treatment yields major improvements in IQ scores, language processing, and in the ability to manage everyday tasks essential for early childhood development and education.

Published in Pediatrics, the University of Washington study was funded by the National Institute of Mental Health. It involved 48 children ages 18 to 30 months, half of whom were randomly assigned to receive the Early Start Denver Model, an intensive autism therapy protocol. The other half were assigned to a control group and received less intensive therapy.

After two years, those who participated in the Denver Model group had average IQ scores 17.6 points higher than the control group, putting them within the range of normal intelligence, while those in the other group gained just seven points, remaining in the zone of intellectual disability.
Adults (22+)

Challenging Behaviors Tool Kit

Sometimes, people with autism display behaviors that are challenging to understand and address. The Challenging Behaviors Tool Kit will provide you with strategies and resources to address these behaviors and help support you during difficult situations.

The kit is broken into different sections. You may want to read the kit in its entirety or work through a section at a time:

- Why is autism associated with aggressive and challenging behaviors?
- Why is it important to do something about challenging behaviors?
- What can I do to help my child's behavior?
- What are the possible causes of a challenging behavior?
- What are the primary strategies for improving behavior implementation?
- What might I expect from a behavior management plan?
- What are long-term solutions and what can we learn from them?
- What is challenging behaviors disorder?

We will share 7 experts to help answer you Frequently asked questions. Gary E. Allman, Executive Director of Research and Advocacy for Autism Speaks, will announce the most important insights.

Check out the videos below to hear what they have to say!

Postsecondary Educational Opportunities Guide

Deciding what to do after high school can be a difficult process. This guide will help you and your family explore the various options available to you.

We provide a clear look at your career options, community colleges, vocational schools, and more. The information will help you find the program that is right for you.

The Postsecondary Educational Opportunities Guide is broken up into the following sections:

- Introduction
- Preparing for Postsecondary Education
- Types of Postsecondary Education Programs
- Postsecondary Education Resources
- Life on Campus
- Learning to Live Independently & Personal Perspective
- Advice for Parents
- Information for People with Autism: A Parent's Perspective
- A Perspective on Postsecondary Educational Opportunities
- Resources
Treatment Evaluation with ASRS

• Step 1: Identify specific area or areas of need based on ASRS T-scores of 60 or more
• Which indicates many characteristics similar to individuals diagnosed with an ASD.
• Examine ASRS Total Score
• The Total Score is, however, insufficient for treatment planning because it is too general.
• Step 2: Look at the separate treatment scales

<table>
<thead>
<tr>
<th>Total score</th>
<th>Parent</th>
<th>Teacher</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skills</td>
<td>76.66</td>
<td>76.66</td>
<td>0</td>
</tr>
<tr>
<td>Social communication</td>
<td>39.52</td>
<td>39.52</td>
<td>0</td>
</tr>
<tr>
<td>Social interaction</td>
<td>50.38</td>
<td>50.38</td>
<td>0</td>
</tr>
<tr>
<td>Treatment</td>
<td>76.66</td>
<td>76.66</td>
<td>0</td>
</tr>
</tbody>
</table>

*Note: Differences marked for significance when comparing Parent and Teacher. Table 2.4 in the ASRS Manual*
• ... and he struggles with maintaining control over his behavior (i.e., he is very argumentative) and attending in complex settings (Self-Regulation score of 70).

### Treatment Evaluation with ASRS

<table>
<thead>
<tr>
<th>Scale</th>
<th>Parent</th>
<th>Teacher</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total score</td>
<td>77</td>
<td>79</td>
<td>-2</td>
</tr>
<tr>
<td>Social communication</td>
<td>77</td>
<td>79</td>
<td>-2</td>
</tr>
<tr>
<td>Emotional</td>
<td>70</td>
<td>75</td>
<td>-5</td>
</tr>
<tr>
<td>Attention</td>
<td>68</td>
<td>76</td>
<td>-8</td>
</tr>
<tr>
<td>Behavioral rigidity</td>
<td>71</td>
<td>79</td>
<td>-8</td>
</tr>
<tr>
<td>Autonomy</td>
<td>71</td>
<td>70</td>
<td>1</td>
</tr>
</tbody>
</table>

"P scores greater than 50 appear in italics."

Raters agree except for Unusual Behavior and Behavioral Rigidity scales.

• The difference between Donny’s Unusual Behavior scores as rated by his mother (60) and teacher (51) suggests that behaviors in the home and the classroom are different; which implies that the exploration of the environmental impact on his odd behaviors could lead to good intervention options.

• The significant difference between Donny’s Behavioral Rigidity scores as rated by his mother (72) and teacher (48), which also warrants further exploration.
Treatment Evaluation with ASRS

- Consistently high scores on Peer Socialization, Social/Emotional Reciprocity and Attention.

<table>
<thead>
<tr>
<th>Parent</th>
<th>Teacher</th>
<th>Difference</th>
<th>Difference causal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total score</td>
<td>75</td>
<td>74</td>
<td>1</td>
</tr>
<tr>
<td>Minor communication</td>
<td>77</td>
<td>70</td>
<td>7</td>
</tr>
<tr>
<td>Minor interaction</td>
<td>77</td>
<td>70</td>
<td>7</td>
</tr>
<tr>
<td>Emotionally expressive</td>
<td>77</td>
<td>70</td>
<td>7</td>
</tr>
<tr>
<td>Social withdrawal</td>
<td>69</td>
<td>68</td>
<td>1</td>
</tr>
<tr>
<td>Peer socialization</td>
<td>52</td>
<td>53</td>
<td>-1</td>
</tr>
<tr>
<td>Adult socialization</td>
<td>52</td>
<td>53</td>
<td>-1</td>
</tr>
<tr>
<td>Social/Emotional reciprocity</td>
<td>52</td>
<td>53</td>
<td>-1</td>
</tr>
<tr>
<td>Peers - language</td>
<td>21</td>
<td>21</td>
<td>0</td>
</tr>
<tr>
<td>Peers - behavior</td>
<td>21</td>
<td>21</td>
<td>0</td>
</tr>
<tr>
<td>Behavioral rigidity</td>
<td>27</td>
<td>26</td>
<td>-1</td>
</tr>
<tr>
<td>Sensory sensitivity</td>
<td>27</td>
<td>26</td>
<td>-1</td>
</tr>
<tr>
<td>Attention</td>
<td>27</td>
<td>26</td>
<td>-1</td>
</tr>
</tbody>
</table>

*Scores greater than 50 appear in italics.

Item level analysis within Peer Socialization helps clarify the exact nature of the behaviors that led to the high score.

Quick Solution Finder

- Peer Socialization:
  - Increase ability to seek out other children.
  - Increase ability to play appropriately with other children.
  - Improve ability to carry on normal conversation with peers.
  - Respond appropriately when other children initiate interaction.

<table>
<thead>
<tr>
<th>Item</th>
<th>Item level analysis</th>
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<tbody>
<tr>
<td>15</td>
<td>Have trouble talking with other children</td>
</tr>
<tr>
<td>31</td>
<td>Talk too much about things that are not important to other children</td>
</tr>
<tr>
<td>151</td>
<td>Have good peer interactions</td>
</tr>
<tr>
<td>152</td>
<td>Talk too much about things that are not important to other children</td>
</tr>
</tbody>
</table>

47
The Quick Solution Guide provides the correspondence of behaviors associated with ASD and specific interventions provided by authors in the chapters that appear in the book.

For example, Donny had a high ASRS T-score on the Social/Emotional Reciprocity scale and one of the items that addressed “looking at others when spoken to” was very high. Interventions for this behavior can be found on pages

### Treatment Evaluation with ASRS

| Table 3.4 Parent T-scores for ASRS scales obtained over three time periods |
|---------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|                                | Time 1 | Time 2 | Time 3 | Program monitoring (Time 1 - 1) | Program monitoring (Time 2 - 1) | Program monitoring (Time 3 - 1) |
| Total score                    | 72     | 50     | 62     | −5 NS | −5 NS | NS          |
| Social/Emotional reciprocity   | 77     | 77     | 66     | 0 NS | 0 NS | 0 NS |
| Unusual behavior               | 81     | 71     | 77     | 2 NS | 2 NS | 2 NS |
| Self-regulation                | 80     | 63     | 78     | −2 NS | 0 NS | 0 NS |
| DSM-IV total                   | 68     | 68     | 68     | 0 NS | 0 NS | 0 NS |
| Peer coordination              | 78     | 69     | 68     | 1 NS | 2 NS | 2 NS |
| ADHD-IV total                  | 54     | 51     | 58     | 0 NS | 0 NS | 0 NS |
| Social/Emotional reciprocity   | 77     | 77     | 63     | 0 NS | 11 NS | 11 NS |
| Atypical language              | 53     | 53     | 52     | 0 NS | 0 NS | 0 NS |
| Sensitivity                    | 49     | 49     | 49     | 0 NS | 0 NS | 0 NS |
| Behavioral rigidity            | 72     | 67     | 67     | −3 NS | 3 NS | 3 NS |
| Sensory sensitivity            | 41     | 44     | 44     | 0 NS | 0 NS | 0 NS |
| Attention                      | 68     | 56     | 50     | −3 NS | −11 NS | −11 NS |

T scores greater than 79 appear in italics.
Note: Differences needed for significance when comparing scores over time for Parent and Teacher ratings are found in Table 4.1 of the ASRS Manual (p = 0.05 with Bonferroni correction).

### The “Prime Directive” is Independence

- Reduce reliance on prompts.
- Help individual’s predict and control environment and behavior.
- Increase self-esteem and self-efficacy.
- Develop independence through a “learning to swim” mindset.
Theater as a Medium to Develop Social Skills

• Theater arts offer an opportunity for individuals with ASD to venture into the community in a win-win relationship.
• EPIC’s performances help the general community better understand the nature of having ASD.
• At the same time, actors with ASD have the opportunity to interact in a medium that we believe will foster not only the development of self-esteem, but appropriate social interaction—the latter very clearly being the primary hurdle to successful adult transition for those with ASD.
• EPIC hopes to quantify our initial experiences of the benefits of theater for those with ASD through a long-term, qualitative study measuring the associative effects of theater arts, training on social skills, sense of purpose and independence in daily life activities.

EPIC Players

Woe There But There at Night

There is a hole filed where everyone came
All except one, a lone grey rock alone in the dark
Spreading cracks across, vectors, discontinuous similarities
To reach each stitching hold, a pleasure to the beholder

[Verse 1]
Look at these! Come quick!

[Verse 2]
Here the grey rock seems ignored
As ugly and dark as a sleeping giant
The sun sets, everyone forms

[Chorus]
Where there are holes, the grey rock in the water
It's home to the dust.
Continuing Education

www.samgoldstein.com

Questions?

www.samgoldstein.com
info@samgoldstein.com
@drsamgoldstein
@doctorsamgoldstein

TEDx: https://www.youtube.com/watch?v=IsfW8JJ-eWM