

The Changing Face of Autism:
Understanding, Evaluating and Treating Autism Spectrum
Disorders: New Data, New Ideas, and the ASRS



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Relevant Disclosure

- Co-author of the Autism Spectrum Rating Scales (MHS, 2009).
- Co-author of Assessment of Autism Spectrum Disorders text (Guilford, 2009).
- Co-author/presenter Assessment of Autism Spectrum Disorders CEU (APA, 2009).
- Co-author of Raising a Resilient Child With Autism Spectrum Disorders (2011, McGraw Hill).
- Co-author of Treatment of Autism Spectrum Disorders (2012, Springer).
- Co-author of the Autism Spectrum Evaluation Scales (in development, MHS).
- Compensated speaker.

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Goals

- Briefly discuss the historical theories of Autism Spectrum Disorders (ASD).
- Define ASD and 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

3

We are social beings.



4

What Benefits Do We Derive From Socialization?



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

5

The social development of autistic children is qualitatively different from other children.



6

In normal children perceptual, affective and neuroregulatory mechanisms predispose young infants to engage in social interaction from very early on in their lives.



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Socialization Begins Early
Reina and Her Mother



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Adrian, my seatmate on a recent flight.



Hello!

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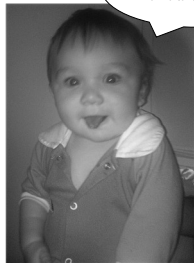
Adrian



You look like an interesting guy.

11

Adrian



See what I can do!
Wanna take me home?

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Where are Autism's Roots?

- In the bible?
- In ancient cultures?
- In history?
- In religion?
- Portrayed in art?

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Les âges de l'ouvrier



Léon FRÉDÉRIC 1895

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Les âges de l'ouvrier



Léon FRÉDÉRIC 1895

17



Is this child portrayed as autistic?


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Kanner's Description (1943)

- first physician in the world to be identified as a child psychiatrist
- founder of the first child psychiatry department at Johns Hopkins University Hospital
- Wrote *Child Psychiatry* (1935), the first English language textbook to focus on the psychiatric problems of children.




Leo Kanner who introduced the label *early infantile autism* in 1943 in his paper : Kanner, L. (1943). Autistic disturbances of affective contact. *Nervous Child*, 2, 217-250.

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Kanner's Description (1943)

- His seminal 1943 paper, "Autistic Disturbances of Affective Contact", together with the work of Hans Asperger, forms the basis of the modern study of autism.
- Leo Kanner was the Editor for *Journal of Autism and Developmental Disorders*, then called *Journal of Autism and Childhood Schizophrenia*



Leo Kanner who introduced the label *early infantile autism* in 1943 in his paper : Kanner, L. (1943). Autistic disturbances of affective contact. *Nervous Child*, 2, 217-250.

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Kanner's Description (1943)

- Inability to relate to others
- Disinterest in parents and people
- Language difficulties
- Fascination with inanimate objects
- Resistance to change in routine
- Purposeless repetitive movements
- ▶ A wide range of cognitive skills
- ▶ Where they possess an innate inability for emotional contact



Leo Kanner who introduced the label *early infantile autism* in 1943 in his paper: Kanner, L. (1943). *Autistic disturbances of affective contact.* *Nervous Child*, 2, 217-250.

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Autism's First Child

AS NEW CASES OF AUTISM HAVE EXPLODED IN RECENT YEARS—SOME FORM OF THE CONDITION AFFECTS ABOUT ONE IN 100 CHILDREN TODAY—EFFORTS HAVE MULTIPLIED TO UNDERSTAND AND ACCOMMODATE THE CONDITION IN CHILDHOOD. BUT CHILDREN WITH AUTISM WILL BECOME ADULTS WITH AUTISM, SOME 500,000 OF THEM IN THIS DECADE ALONE. WHAT THEN? MEET DONALD GRAY TRIPLETT, 77, OF FOREST, MISSISSIPPI. HE WAS THE FIRST PERSON EVER DIAGNOSED WITH AUTISM. AND HIS LONG, HAPPY, SURPRISING LIFE MAY HOLD SOME ANSWERS.

By John Domsan and Caren Zucker



Atlantic Monthly, October 2010

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A Brief Current Research Update of ASD and Transition to Adulthood

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Background

- Autism Spectrum Disorder (ASD) is a neurodevelopmental condition marked by deficits in social interaction, communication, and repetitive behaviors.
- The etiology of ASD is complex, involving both genetic and environmental factors.
- Recent studies emphasize the need for individualized and technology-driven interventions to improve quality of life and functional outcomes (Qin et al., 2024).
- Despite progress in understanding ASD, challenges remain in diagnosis and treatment, mainly due to the disorder's heterogeneity and co-occurring conditions, which complicate the diagnostic process (Hus & Segal, 2021).

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Diagnosis

- ASD diagnosis typically involves using standardized tools such as the Autism Diagnostic Observation Schedule (ADOS-2) and Autism Spectrum rating Scales (ASRS). However, these tools do not specifically diagnose
- This leads to potential misdiagnosis, especially in those with co-occurring cognitive or sensory impairments (Bishop & Lord, 2023).
- Early detection is critical, as timely intervention can significantly influence developmental outcomes.
- Advances in diagnostic technologies, including machine learning and biomarkers, enhance the precision of ASD diagnoses (Yu et al., 2024; Rasul et al., 2024).

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Treatment

- The treatment of ASD is highly individualized, with a range of behavioral, educational, and pharmacological interventions available.
- Applied Behavior Analysis (ABA) remains one of the most well-established therapies, particularly for improving children's intellectual functioning and adaptive behaviors (Eckes et al., 2023).
- Other interventions, such as Cognitive Behavioral Therapy (CBT), have proven effective in managing emotional and social challenges (You et al., 2023).
- Emerging therapies, including transcranial pulse stimulation and virtual reality-based interventions, offer promising alternatives for addressing the core symptoms of ASD and improving social skills (Cheung et al., 2023; Dechsing et al., 2021).

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Outcome

- Long-term outcomes for individuals with ASD vary widely, influenced by early intervention, co-occurring conditions, and the level of intellectual functioning.
- Early comprehensive treatment models have improved cognitive, language, and adaptive functioning, especially when intensive interventions involve parental participation (Shi et al., 2021).
- However, many individuals with ASD continue to face challenges in adulthood, particularly in areas such as employment and independent living (Scheeren et al., 2022).
- The outcomes' trajectory highly depends on the severity of symptoms and access to sustained, individualized support (Elias & Lord, 2021).

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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.

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Use of Technology to Detect Risk of ASD

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 Professor and Chief, Division of Autism and Related Disorders, Department of Pediatrics, Emory University School of Medicine

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 Assistant Professor, Division of Autism and Related Disorders, Department of Pediatrics, Emory University School of Medicine

EMORY UNIVERSITY SCHOOL OF MEDICINE


Children's Healthcare of Atlanta

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HOW IT WORKS:

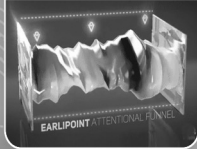
1 THEY WATCH

Children watch a series of short video scenes of social interactions while their looking behavior is monitored.




2 EARLPOINT DETECTS

FDA-authorized EarlPoint captures and analyzes looking behavior imperceptible to the human eye.



3 YOU DIAGNOSE


With robust data empowering clinicians to reach a diagnosis with confidence and objectivity.




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**Toddler
Eye Tracking Studies**



Typically Developing Toddler
Toddler with Autism

*Klin et al., Nature (2009);
Jones, Carr, & Klin, Arch Gen Psych (2008)*

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Predictors of Outcome
Jones, Carr, & Klin (2008; Arch Gen Psychiatry)

Fixation Time on Eye Region, %

ADOS Social Algorithm Score

$r = -.669, p < .01$

Less fixation time on eyes predicts more severe social disability.

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Infant Eye Tracking Studies

AJRISH: A NEW FRONTIER
 Latest Research

Patterns of Eye Gaze at monthly intervals
 Birth through 36 months – data collected over 11 visits (2, 3, 4, 5, 6, 9, 12, 15, 18, 24, 36m)
Creating Growth Charts of Social Visual Engagement

Typically Developing Infant in Lab
 Jones & Klin, 2013

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5 Month-Old – Low Risk Infant
Courtesy of Ami Klin & Warren Jones

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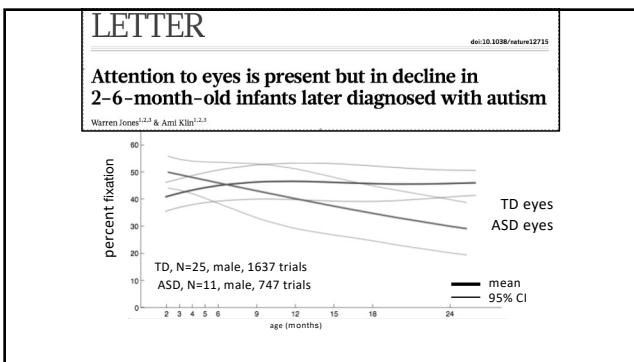
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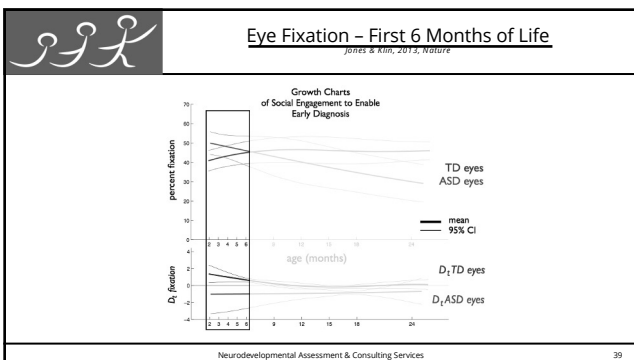
5 Month-Old – High Risk Infant
Courtesy of Ami Klin & Warren Jones

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Genetic Predisposition to Visual Engagement?
 Jones et al., 2018, *Nature*

Nature, 2017 July 20; 547(7663): 340–344. doi:10.1038/nature22999.

Infant viewing of social scenes is under genetic control and atypical in autism

John N. Constantino^{1,2,3}, Stefanie Kennon-McGill¹, Claire Weichselbaum¹, Natasha Marrus^{1,3}, Alyzeh Haider¹, Anne L. Glowinski¹, Scott Gillespie⁴, Cheryl Klaiman^{5,6}, Ami Klin^{5,6,7}, and Warren Jones^{5,6,7}

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Studies of Speech Production & Perception
 Gordon Ramsay, Director of Spoken Communication Lab, Marcus Autism Center

- Prenatal ultrasound
- Vocal recordings
- Face & voice perception
- Motor development
- 3D head growth

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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.

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Determining IDEA Eligibility of Autism

- Autism, as defined by **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 could be diagnosed as having autism if the criteria above are satisfied. This enables a child to receive special education services under this classification if he or she develops signs of autism after his or her third birthday.
- 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.

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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).

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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.

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Core DSM and ICD Core ASD Symptoms in All Ages

- Impaired social relations.
- Impaired communication skills.
- Impaired behavior.



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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



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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



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

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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.

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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.

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

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DSM 5 TR 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.

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DSM 5 TR 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.

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DSM 5 TR 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 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.

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DSM 5 TR 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 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 hypo-reactivity to sensory input or unusual interest in sensory aspects of the environment (e.g., apparent indifference to pain/temperature, adverse response to specific sounds or textures, excessive smelling or touching of objects, visual fascination with lights or movement).

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DSM 5 TR 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.

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DSM 5 TR ASD Criteria C, D, E.

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 co-morbid diagnoses of autism spectrum disorder and intellectual disability, social communication should be below that expected for general developmental level.

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The Three Functional Levels of Autism

ASD Level 1 Requiring Support	ASD Level 2 Requiring Substantial Support	ASD Level 3 Requiring Very Substantial Support
		
difficulty initiating social interactions organization and planning problems can hamper independence	social interactions limited to narrow special interests frequent restricted/repetitive behaviors	severe deficits in verbal and nonverbal social communication skills great distress/difficulty changing actions or focus

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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 odd, wooden or exaggerated body language."

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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.”

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Lorna Wing: Godmother of Aspergers



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DSM IV TR Autism and Asperger Syndrome

Data from the Autism Spectrum Rating Scales Epidemiologic Sample (2009)

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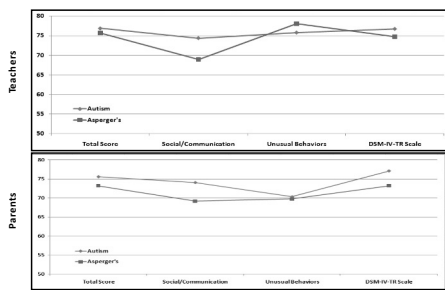
Autism vs. Asperger

- 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.

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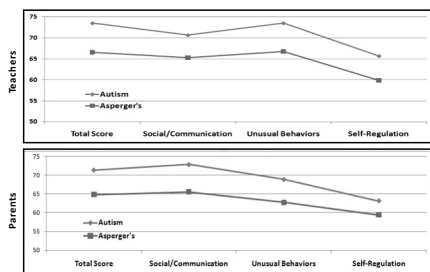
Autism vs Asperger (2-5 years)



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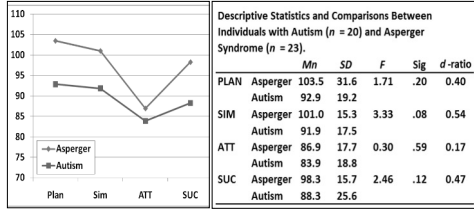
Autism vs Asperger (6-18 Years)



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Autism vs Asperger (6-18 years)



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DSM 5 TR 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).

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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 limited capacities).

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!

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Autism Spectrum Disorder as Reflected in the Autism Spectrum Rating Scales (Goldstein and Naglieri, 2009) Exploratory and Confirmatory Factor Analyses

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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.

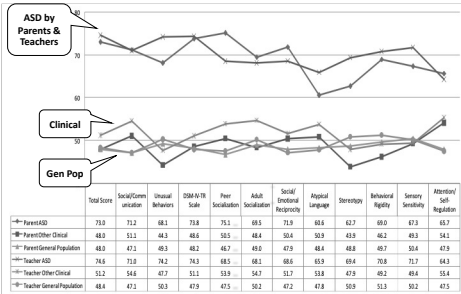
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ASRS Profiles

- 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.

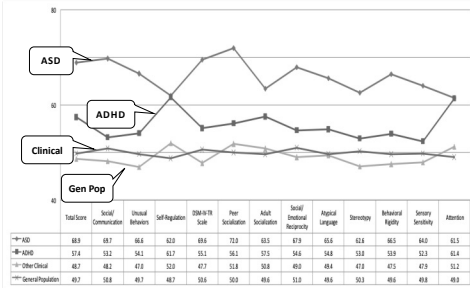
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ASRS Validity for ages 2-5



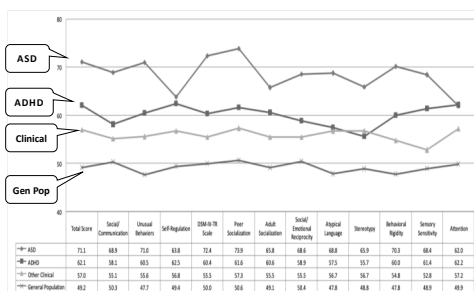
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ASRS Validity: Ages 6-18 Parents



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ASRS Validity: Ages 6-18 Teachers



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The ASRS now has a DSM 5 scale as well as scoring options for non-verbal children.

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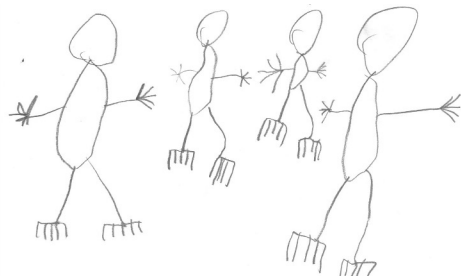
Meet Kevin



77

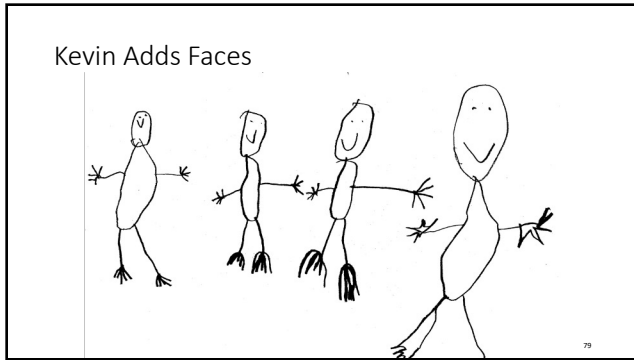
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Kevin Draws His Family



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Pretend Play in Autism

- Limited, often absent
- When present usually characterized by: repetitive themes, rigidity, isolated acts, one-sided play, limited imagination.

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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.

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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.

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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.

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Importance of a National Norm

ASRS Standardization Samples by Age and Rater		
Age Groups	Parent Raters	Teacher Raters
2 - 5 Years	320	320
6 - 11 Years	480	480
12 - 18 Years	480	480
Sub Total n	1,280	1,280
TOTAL N	2,560	

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.

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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)

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ASRS Reliability

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

Scale	Parent Ratings			Teacher Ratings		
	Normative Sample (N = 320)	Clinical Sample (N = 243)	Average	Normative Sample (N = 320)	Clinical Sample (N = 249)	Average
Total Score	95	98	97	94	99	97
ASRS Scales						
Social Communication	94	98	96	95	98	97
Unusual Behaviors	91	96	94	95	97	92
DSM-IV-TR Scale	91	97	94	91	98	94
Peer Socialization	77	96	89	85	95	91
Adult Socialization	67	85	76	78	85	81
Social/Emotional Reciprocity	83	96	91	88	96	93
Treatment Scales						
Atypical Language	71	77	74	59	79	69
Stereotypy	75	86	80	67	86	77
Behavioral Rigidity	85	94	90	82	95	90
Sensory Sensitivity	71	89	81	59	90	77
Attention/Self-Regulation	83	88	85	83	89	86

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ASRS Reliability Ages 6-18 : Parents

Scale	6 to 11 Years			12 to 18 Years		
	Normative Sample (N = 480)	Clinical Sample (N = 230)	Average	Normative Sample (N = 480)	Clinical Sample (N = 185)	Average
Total Score	97	95	97	97	97	97
ASRS Scales	Social/Communication	91	97	94	92	95
	Unusual Behaviors	94	95	94	93	95
	Self-Regulation	92	92	92	93	93
DSM-IV-TR Scale	95	96	95	94	96	95
Treatment Scales	Peer Socialization	84	92	87	84	91
	Adult Socialization	77	77	77	79	77
	Social/Emotional Reciprocity	85	94	89	88	91
	Atypical Language	81	85	82	82	85
	Stereotypy	79	78	79	77	79
	Behavioral Rigidity	89	92	90	89	94
	Sensory Sensitivity	79	85	81	77	82
Attention	90	91	90	89	91	

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ASRS Reliability Ages 6-18 : Teachers

Scale	6 to 11 Years			12 to 18 Years		
	Normative Sample (N = 480)	Clinical Sample (N = 167)	Average	Normative Sample (N = 480)	Clinical Sample (N = 325)	Average
Total Score	97	95	97	97	97	97
ASRS Scales	Social/Communication	93	96	94	92	96
	Unusual Behaviors	93	95	94	94	95
	Self-Regulation	94	93	94	93	91
DSM-IV-TR Scale	94	96	95	94	96	95
Treatment Scales	Peer Socialization	84	90	86	83	90
	Adult Socialization	80	81	80	77	77
	Social/Emotional Reciprocity	89	92	90	89	92
	Atypical Language	75	87	79	80	85
	Stereotypy	69	77	71	72	81
	Behavioral Rigidity	90	93	91	90	94
	Sensory Sensitivity	77	87	80	84	87
Attention	92	92	92	91	92	

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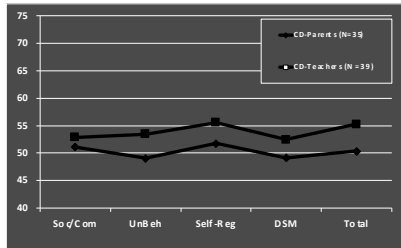
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ASD vs Communication Disorders

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ASD vs. Communication Disorders



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Race / Ethnic Differences

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92

ASRS Race Ethnic Differences

Table 8.26. Differences between Race/Ethnic Groups: ASRS (6-18 Years) Parent Ratings

Scale		African American	Hispanic	White	d-ratio		
					White African American	White-Hispanic	
Total Score	M	50.9	45.7	49.3	0.14	0.31	
	SE	0.9	1.0	0.5			
	N	122	128	536			
ASRS Scales	Social/Communication	M	50.8	46.4	49.1	0.15	0.24
		SE	0.9	0.9	0.5		
		N	122	128	536		
	Unusual Behaviors	M	50.6	45.6	49.4	0.11	0.33
		SE	0.9	0.9	0.5		
		N	122	128	536		
Self-Regulation	M	50.3	46.1	49.1	0.10	0.26	
	SE	0.9	1.0	0.5			
	N	122	128	536			
DSM-IV-TR Scale	M	51.0	45.6	49.7	0.13	0.37	
	SE	0.9	0.9	0.5			
	N	128	131	549			

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93

Race Ethnic Differences Short Form

Table 9.12. Effect of Race/Ethnicity: ASRS Short Forms

Age	Rater		Mean			d-ratio	
			AA	HI	WH	AA - WH	WH - HI
2-5 Years	Parent	M	46.5	49.2	49.9	-0.34	0.06
		SE	1.4	1.7	0.8		
		N	52	57	172		
	Teacher/Childcare Provider	M	48.0	45.6	50.7	-0.18	0.34
		SE	1.7	1.9	1.1		
		N	47	48	195		
6-18 Years	Parent	M	50.6	46.2	49.6	0.09	0.29
		SE	0.9	0.9	0.5		
		N	133	135	560		
	Teacher	M	50.7	51.9	49.8	0.07	-0.16
		SE	0.9	0.9	0.6		
		N	132	152	521		

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94

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.



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<http://autismprc.org.unc.edu/content/briefs>

THE NATIONAL PROFESSIONAL DEVELOPMENT CENTER ON AUTISM SPECTRUM DISORDERS

EVIDENCE-BASED PRACTICES Briefs

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Comparison with National Standards Project

Autism Internet Modules

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Evidence-Based Practice Briefs

Evidence-based practice (EBP) briefs have been developed for all 24 identified evidence-based practices. Select a practice below to access the overview of the practice and downloadable PDF files for the EBP brief and the individual components. An evidence-based practice brief consists of the following core components:

ESP BRIEF COMPONENTS

Overview: A general description of the practice and how it can be used with learners with autism spectrum disorders.

Step-by-Step Directions for Implementation: Source step-by-step directions detailing exactly how to implement a practice, based on the research articles identified in the evidence base.

Implementation Checklist: The implementation checklist offers a way to document the degree to which practitioners are following the step-by-step directions for implementation, which are based on the research articles identified in the evidence base.

Evidence Base: The list of references that demonstrate that the practice is efficacious and meets the National Professional Development Center's criteria for being identified as an evidence-based practice.

Some practices include supplemental materials such as data collection sheets.

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<http://autismqdc.fog.unc.edu/content/briefs>

EVIDENCE-BASED PRACTICES FOR CHILDREN AND YOUTH WITH ASD

- Antecedent-Based Interventions (ABI)
- Computer-Aided Instruction
- Differential Reinforcement
- Discrete Trial Training
- Extinction
- Functional Behavior Assessment
- Functional Communication Training
- Naturalistic Intervention
- Parent-Implemented Interventions
- Peer-Mediated Instruction and Intervention
- Picture Exchange Communication System (PECS)
- Pivotal Response Training
- Prompting
- Reinforcement
- Response Interruption/Redirection
- Self-Management
- Social Narratives
- Social Skills Groups
- Speech Generating Devices/VOCA
- Structured Work Systems
- Task Analysis
- Time Delay
- Video Modeling
- Visual Supports

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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.

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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?

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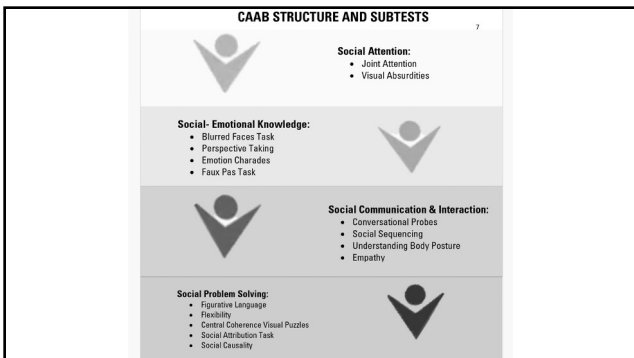


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Characteristic Cognitive Impairments to Evaluate in ASD

- The ability to attribute mental states to oneself and others.
- The ability to display emotional reaction appropriate to another person's mental state (joint attention of emotion).
- The ability to plan and attend to relevant details in the environment.
- The ability to understand the communicative content of gaze.
- The ability to work cooperatively with others (joint attention of behavior).
- The ability to understand, comprehend, analyze, synthesize, evaluate and differentiate in particular social information in the environment.

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Medications

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



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New Drug May Treat ASD

30 | [FRAGILE X](#) | 15 September 2012
 Vol. 4, Issue 152, p. 152ra127
 Sci. Transl. Med. DOI: 10.1126/scitranslmed.3004214

RESEARCH ARTICLE

FRAGILE X SYNDROME
Effects of STX209 (Arbaclofen) on Neurobehavioral Function in Children and Adults with Fragile X Syndrome: A Randomized, Controlled, Phase 2 Trial
 Elizabeth M. Berry-Kravis¹, David Hess¹, Barbara Rathmel¹, Peter Zarevics¹, Maryann Cherubini¹, Karen Walton-Bowen¹, Yi Mu¹, Danh V. Nguyen¹, Joseph Gonzalez-Heidrich¹, Paul P. Wang^{1,2}, Randall L. Carpenter³, Mark P. Bear⁴ and Kandi J. Hagerman¹

¹ Author Affiliations

^{1,2}To whom correspondence should be addressed. E-mail: pwang@ssasidtherapeutics.com

ABSTRACT

Research on animal models of Fragile X syndrome suggests that STX209, a γ -aminobutyric acid type B (GABA_B) agonist, might improve neurobehavioral function in affected patients. We evaluated whether STX209 improves behavioral symptoms of Fragile X syndrome in a randomized, double-blind, placebo-controlled crossover study in 63 subjects (55 male), ages 6 to 39 years, with a full mutation in the *FMR1* gene (>200 CGG triplet repeats). We found no difference from placebo on the primary endpoints, the Aberrant Behavior Checklist—Irritability (ABC-I) subscale. In the other analyses specified in the protocol, improvement was seen on the visual analog scale ratings of parent-nominated problem behaviors, with positive trends on multiple global measures. Post hoc analysis with the ABC—Social Avoidance scale, a newly validated scale for the assessment of Fragile X syndrome, showed a significant beneficial treatment effect in the full study population. A post hoc subgroup of 27 subjects with more severe social impairment showed improvements on the Vineland-II-Socialization raw score, on the ABC—Social Avoidance scale, and on all global measures. STX209 was well tolerated, with 8% incidences of sedation and of headache as the most frequent side effects. In this exploratory study, STX209 did not show a benefit on irritability in Fragile X syndrome. Nonetheless, our results suggest that GABA_B agonists have potential to improve social function and behavior in patients with Fragile X syndrome.

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Psychostimulants for ADHD-like symptoms in individuals with autism spectrum disorders.

Cortese S, Castellanos F, Morello C, Roux S, Bonnet-Brihault F.

Institute for Pediatric Neuroscience, NYU Child Study Center, Langone Medical Center, 215 Lexington Avenue, 14th Floor, 10016 NY, USA. p.willie.cortese@gmail.com
 Expert Rev Neurother. 2012 Apr;12(4):461-73.

We conducted a comprehensive review of studies assessing the efficacy and tolerability of psychostimulants for ADHD-like symptoms in individuals with autism spectrum disorder (encompassing autism disorder, Asperger's syndrome and pervasive developmental disorders not otherwise specified). PubMed, CINAHL, EMBASE, Web of Science, ERIC and CNHAL were searched through 3 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. Most of the studies assessed methylphenidate immediate release. Despite inter-study heterogeneity, taken together, the results of the selected reports suggest that psychostimulants may be effective for ADHD-like symptoms in autism spectrum disorder individuals. The most common adverse events reported in the included trials were appetite reduction, sleep-onset difficulties, irritability and emotional outbursts. We discuss future directions in the field, including the need for trials assessing more ecological outcomes and combined treatment strategies tailored to the specific individual features.

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

Laudan B. Jahromi, Connie L. Kasari, James T. McCracken, Lisa S-Y. Lee, et. al.

Journal of Autism and Developmental Disorders, 2009)

106

Drugs that increase serotonin transmission may be useful in reducing interfering repetitive behaviors and aggression as well as improving social relatedness (few controlled studies).

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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.

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Oxytocin May Have Many Effects

Personality and Social Psychology Review

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Oxytocin and Human Social Behavior

Anne Campbell
Durham University, Durham, UK, a.c.campbell@durham.ac.uk

Abstract

Despite a general consensus that oxytocin (OT) has prosocial effects, there is no clear agreement on how these effects are achieved. Human research on OT is reviewed under three broad research initiatives: attachment and trust, social memory, and fear reduction. As an organizing perspective for scholars, current knowledge, a tentative model of the causes and effects of alterations in OT level is proposed. The model must remain provisional until conceptual and methodological problems are addressed that arise from a failure to distinguish between traits and states, offering research paradigms used in relation to OT as an independent versus dependent variable, and the possibility that OT effects depend on the trait-emotional state of the individual. Social and personality psychologists have important roles to play in developing more rigorous and creative research designs.

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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 J. MCDOUGLE, 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.

J. AM. ACAD. CHILD ADOL. PSYCHIATRY,
48:12, DECEMBER 2009.

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Comorbid ADHD and Anxiety Affect Social Skills Group Intervention Treatment Efficacy in Children With Autism Spectrum Disorders

Kevin M. Antshel, PhD, Carol Polacek, PhD, NP, Michele McMahon, CSW, Karen Dygert, NP, Laura Spenceley, MA, Lindsay Dygert, BS, Laura Miller, BA, Fatima Faisal

ABSTRACT: Objective: To assess the influence of psychiatric comorbidity on social skill treatment outcomes for children with autism spectrum disorders (ASDs). Methods: A community sample of 83 children (74 males, 9 females) with an ASD (mean age = 9.5 yr; SD = 1.2) and common comorbid disorders participated in 10-week social skills training groups. The first 5 weeks of the group focused on conversation skills and the second 5 weeks focused on social problem solving skills. A concurrent parent group was also included in the treatment. Social skills were assessed using the Social Skills Rating System. Ratings were completed by parents at pre- and posttreatment time periods. Results: Children with ASD and children with an ASD and comorbid anxiety disorder improved in their parent reported social skills. Children with ASD and comorbid attention deficit/hyperactivity disorder failed to improve. Conclusion: Psychiatric comorbidity affects social skill treatment gains in the ASD population.

J Dev Behav Disord 22:433-440, 2011 | [Index terms:](#) autism spectrum, social skills, ADHD.

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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.

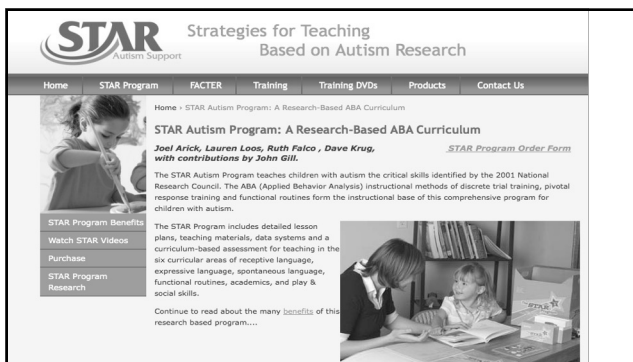
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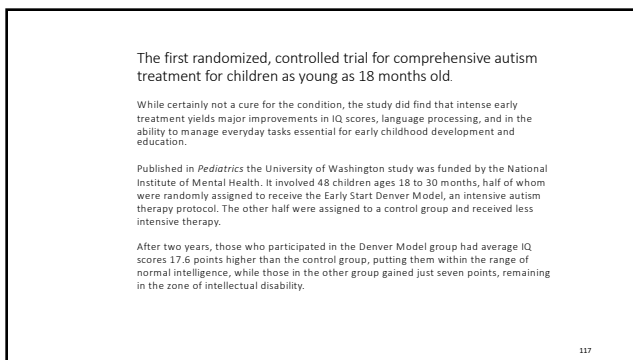
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Challenging Behaviors Tool Kit


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?
- Who Can Help? What is this Idea of a Team?
- What are the Things to Consider?
- What are the Positive Strategies for Supporting Behavior Implementation?
- What Might I Need to Know about Managing a Crisis Situation?
- What are Long Term Solutions and Where Can We Learn More?
- Challenging Behaviors Glossary

We sat down with 2 experts to help answer your frequently asked questions: Gary S. Mayerson, Founding Attorney at Mayerson and Associates, and Nicole Weidenbaum, Executive Director of Nassau Suffolk Services for Autism.

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



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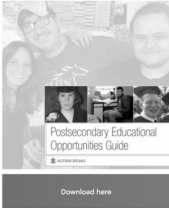
Postsecondary Educational Opportunities Guide

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.

The guide provides a closer look at four-year universities, community colleges, vocational/technical school, life skills programs 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
- Obtaining Services and Asking for Accommodations
- Life on Campus
- Learning to Live Independently: A Personal Perspective
- Peer-to-Peer Advice
- Advice for Parents
- Alternative Learning for People With Autism: A Personal Perspective
- A Retrospective on Postsecondary Educational Opportunities
- Resources



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Employment Tool Kit

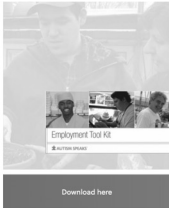
Autism Speaks would like to help you find the right job by providing you with tools and resources, including our Employment Tool Kit.

We have written this kit to help you research, find and keep employment. We compiled job-related stories, tips and information from a collaboration of people, including adults with autism.

Although this guide is written for you, we know that it will also be helpful for family members, service providers, business leaders and anyone who is helping someone with autism find and keep a job.

The Employment Tool Kit is divided into the following sections:

- Introduction
- Self-Advocacy
- What Job is Right For You?
- Benefits and Funding
- Employment Models: What Option is Best For You?
- Your Job Search
- Transportation Options
- Resumes, Cover Letters and Applications
- The Job Interview
- Accommodations and Disclosure
- Soft Skills: Understanding the Social Elements of Your Job
- Success Stories and Lessons Learned



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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.

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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.

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EPIC Players

ABOUT US

EPIC Players is a nonprofit, neuro-inclusive theatre company dedicated to creating professional performing arts opportunities and supportive social communities through the arts for person living with developmental disabilities.

Through neuro-inclusive mainstage productions, musical cabarets, original showcases, skills based classes and career resources, we hope to breakdown social stigmas surrounding neuro-diverse communities, increase critical employment opportunities and pioneer increased inclusion in the arts.

TICKETS AUDITION

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Devlin Teichert
 Song of Myself
 December 16, 2008

Were They but There at Night

There is a bolder field where every stone
 Is a glazing, glittering gem, like stars fallen from the sky
 All except one, a plain grey rock alone in the center
 Feeling excluded and shunned


People come, tourists, painters, photographers, collectors
 To view each shining bolder, a pleasure to the beholder
 Ooh! Ahh! Look at this one! Come quick!
 Pockets bulge with fragrances and paint cans run dry

But the grey rock remains ignored
 An ugly blotch on a sweeping mural
 The sun sets, everyone leaves
 And they miss the ocarapiece of the field
 For when night falls, the grey rock in the center




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Continuing Education



CEFI® [Manual Quiz: 3 CE Credits]
 The Comprehensive Executive Function Inventory™ is a comprehensive evaluation of executive function strengths and weaknesses in youth aged 5 to 18 years.



ASRS® [Manual Quiz: 4 CE Credits]
 The Autism Spectrum Rating Scales™ identifies symptoms, behaviors, and associated features of Autism Spectrum Disorders in youth

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DR. SAM GOLDSTEIN
 Neuropsychologist - Author -
 Test Developer - Educator

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