Understanding and Evaluating Autism Spectrum Disorder

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1

Relevant Disclosure

- Co-author of the Autism Spectrum Rating Scales (MHS, 2009).
- Co-author of Assessment of Autism Spectrum Disorders 1st and 2nd Editions (Guilford, 2009, 2018).
- 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).
- Compensated speaker.

2

COVID 19 and ASD

- Children and youth with ASD are as vulnerable to the effects of prolonged isolation or quarantine as other children but may experience greater difficulty adapting to our new norms, especially as inflexibility and insistence on sameness are hallmark characteristics of this disorder.
- The consequences of a pandemic and the measures put in place to decrease transmission of COVID-19 have the potential to adversely affect children and youth with ASD and their families, including siblings.
- Parental anxiety around job loss, economic uncertainty, lack of access to health care facilities and treatment centers and extension of wait-lists for early intervention programs may cripple a caregiver's or parent's ability to cope with the COVID-19 pandemic.

3

Current COVID/ASD Resources

- Handle the Autism Spectrum Condition during Coronavirus (COVID-19) *Stay at Home* Period: Ten Tips for Helping Parents and Caregivers of Young Children. **https://doi.org/10.3390/brainsci10040207**
- Autism and COVID-19: A Case Series in a Neurodevelopmental Unit **https://doi.org/10.3390/jcm9092937**
- Could Autism Spectrum Disorders Be a Risk Factor for COVID-19? https://doi.org/10.1016/j.mehy.2020.109899
- An Expert Discussion on Autism in the COVID-19 Pandemic https://doi.org/10.1089/aut.2020.29013.sjc
- Neuropsychology of COVID-19: Anticipated Cognitive and Mental Health Outcomes https://doi.org/10.1037/neu0000731

4

We Are Social Beings

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What Benefits Do We Derive From Socialization?

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

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The social development of children with ASD is qualitatively different from other children.

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In normal developing children perceptual, affective and neuroregulatory mechanisms predispose young infants to engage in social interaction from very early on in their lives. They must in order to maximize chances of survival.

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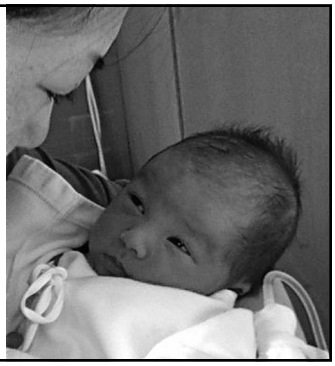
Socialization Begins Early:
Reina and Her Mother



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When we look at babies our brain responds uniquely.

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Adrian, my seatmate on a recent flight.

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Adrian, my seatmate on a recent flight.

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Adrian, my seatmate on a recent flight.

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Observing and Imitating

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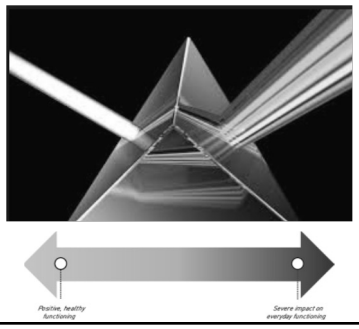
Spectrum Versus Continuum



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Autism is increasingly 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.

19

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

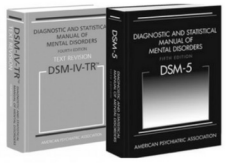
20

What Do We Mean By the Term "High Functioning?"

- Level of Intellect?
- Absence of co-morbidities?
- Absence of learning Disabilities?
- Mild symptom severity of ASD?
- Mild impairment due to ASD?
- Adequate adaptive behavior despite ASD?
- Level of support required?

21

The DSM 5 TR Criteria



22

DSM 5 TR

- Combined social and communication categories.
- Tightened required criteria reducing the number of symptom combinations leading to a diagnosis.
- Omitted Retts and Childhood Disintegrative Disorder.
- Clarified co-morbidity issues
- Eliminated PDD NOS and Aspergers in favor of Autism Spectrum Disorder.

23

23

DSM 5 TR

- 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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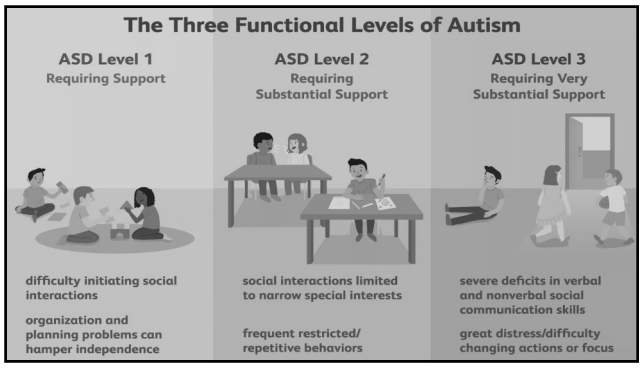

25

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).

26

26

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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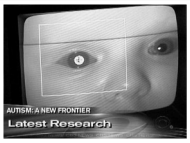
Infant Eye Tracking Studies



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

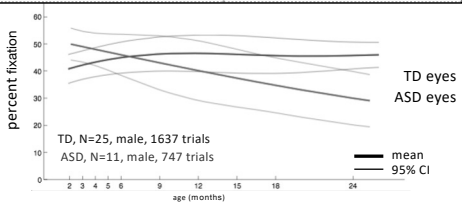
28

LETTER

doi:10.1038/nature12715

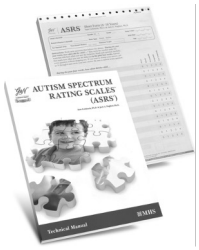
Attention to eyes is present but in decline in 2–6-month-old infants later diagnosed with autism

Warren Jones[1,2,3] & Ami Klin[1,2,3]



29

A Statistically Derived Model of ASD



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Exploratory Factor Analysis for 2-5 Years

- A two-factor solution was best for parent and teacher raters
  - **Factor I:** included primarily items related to both socialization and communication (e.g., keep a conversation going, understand how someone else felt) - **Social/Communication**
  - **Factor II:** included items related to behavioral rigidity (e.g., insist on doing things the same way each time), stereotypical behaviors (e.g., flap his/her hands when excited), and overreactions to sensory stimulation (e.g., overreact to common smells)- **Unusual Behaviors**

31

31

Exploratory Factor Analysis for 6-18 Years

- A three-factor solution was best for both parent and teachers versions of the ASRS
  - **Factor I:** included primarily items related to both socialization and communication -**Social/Communication**
  - **Factor II:** included items related to behavioral rigidity, stereotypical behaviors and overreactions to sensory stimuli - **Unusual Behaviors**
  - **Factor III**: included items related to attention problems (e.g., become distracted), impulsivity (e.g., have problems waiting his/her turn), and compliance (e.g., get into trouble with adults, argue and fight with other children) - **Self-Regulation**.

32

32

Factor Consistency

- The consistency of the ASRS scale structure across several demographic groups (gender, age group, race, and clinical status) was studied
- The factor loadings for the groups were correlated using the coefficient of congruence
  - results revealed a very high degree of consistency between all groups
  - indicating that the factor structure of the forms generalized across the demographic groups

33

33

Current View of ASD In ASRS

- Based on the factor analysis, we suggest that ASD is best described as having two clusters of behaviors for children ages 2-5 and three for those aged 6 to 18 years of age.
  - Ages 2 – 5 years
    - Social / Communication
    - Unusual Behaviors
  - Ages 6 – 18 years
    - Social / Communication
    - Unusual Behaviors
    - Self-Regulation
- This is the organizational form of the ASRS.

34

34

DSM IV TR Autism and Asperger Syndrome

35

35

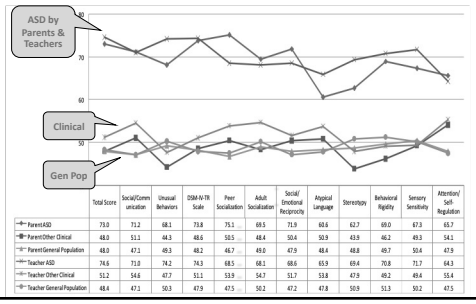
DSM IV TR Autism vs Asperger

- 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

36

36

ASRS Validity for ages 2-5



	Total Score	Social/Communication	Unusual Behaviors	DSM-IV-TR Scale	Peer Socialization	Adult Socialization	Social/ Emotional Reciprocity	Atypical Language	Stereotypy	Behavioral Rigidity	Sensory Sensitivity	Attention/ Self-Regulation
Parent ASD	73.0	71.2	68.1	73.8	75.1	69.1	71.9	60.6	62.7	69.0	67.3	69.7
Parent Other Clinical	48.0	51.1	44.3	48.6	50.5	48.4	50.4	50.9	43.9	46.2	49.3	54.1
Parent General Population	48.0	47.2	49.3	48.2	46.7	49.0	47.9	48.4	48.8	49.7	50.4	47.9
Teacher ASD	74.6	71.0	74.2	74.3	68.5	68.1	68.6	65.9	69.4	70.8	71.7	64.3
Teacher Other Clinical	51.2	54.6	47.7	51.1	53.9	54.7	51.7	53.8	47.9	49.2	49.4	55.4
Teacher General Population	48.4	47.1	50.3	47.9	47.5	50.2	47.2	47.8	50.9	51.3	50.2	47.5

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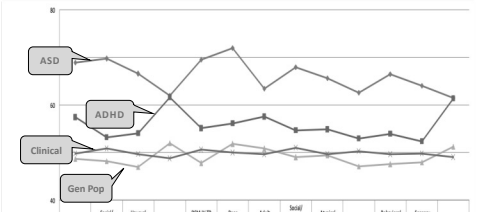
ASRS Validity: Ages 6-18 Parents

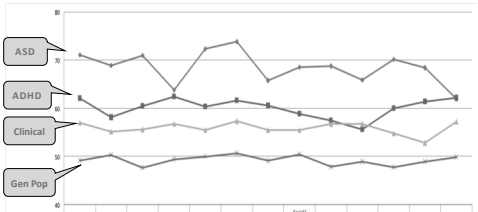


	Total Score	Social/ Communication	Unusual Behaviors	Self-Regulation	DSM-IV-TR Scale	Peer Socialization	Adult Socialization	Social/ Emotional Reciprocity	Atypical Language	Stereotypy	Behavioral Rigidity	Sensory Sensitivity	Attention
ASD	68.9	69.7	66.6	62.0	69.6	72.0	63.5	67.9	65.6	62.6	66.5	64.0	61.5
ADHD	57.4	53.2	54.1	61.7	55.1	56.1	57.5	54.6	54.8	53.0	53.9	52.3	61.4
Other Clinical	48.7	48.2	47.0	52.0	47.7	51.8	50.8	49.0	49.4	47.0	47.5	47.9	51.2
General Population	49.7	50.8	49.7	48.7	50.6	50.0	49.6	51.0	49.6	50.3	49.6	49.8	49.0

38

38

ASRS Validity: Ages 6-18 Teachers



	Total Score	Social/ Communication	Unusual Behaviors	Self-Regulation	DSM-IV-TR Scale	Peer Socialization	Adult Socialization	Social/ Emotional Reciprocity	Atypical Language	Stereotype	Behavioral Rigidity	Sensory Sensitivity	Attention
ASD	71.1	68.9	71.0	63.8	72.4	73.9	65.8	68.6	68.8	65.9	70.3	68.4	62.0
ADHD	62.1	58.1	60.5	62.5	60.4	61.6	60.6	58.9	57.5	55.7	60.0	61.4	62.2
Other Clinical	57.0	55.1	55.6	56.8	55.5	57.3	55.5	55.5	56.7	56.7	54.8	52.8	57.2
General Population	49.2	50.3	47.7	49.4	50.0	50.6	49.1	50.4	47.8	48.8	47.8	48.9	49.9

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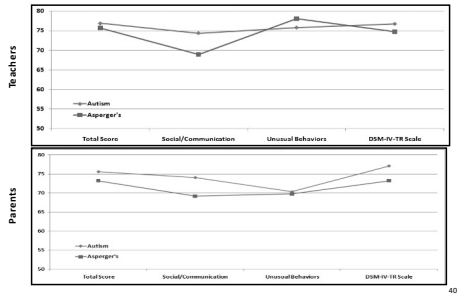
DSM IV TR Autism vs Asperger 2-5 Years



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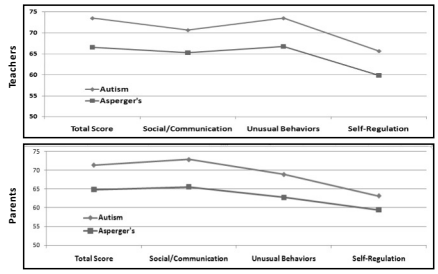
DSM IV TR Autism vs Asperger 6-18 Years



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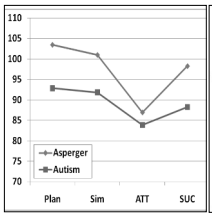
DSM IV TR Autism vs Asperger 6-18 Years



Descriptive Statistics and Comparisons Between Individuals with Autism (n = 20) and Asperger Syndrome (n = 23).

		Mn	*SD*	*F*	Sig	*d* -ratio
PLAN	Asperger	103.5	31.6	1.71	.20	0.40
	Autism	92.9	19.2			
SIM	Asperger	101.0	15.3	3.33	.08	0.54
	Autism	91.9	17.5			
ATT	Asperger	86.9	17.7	0.30	.59	0.17
	Autism	83.9	18.8			
SUC	Asperger	98.3	15.7	2.46	.12	0.47
	Autism	88.3	25.6			

42

42

ASRS 2 Adult Data collection

- Pilot Data collection for the ASRS 2 took place in 2016-2018
- Data was collected from General population and clinical samples
- Data was collected from:
  - Individuals 19 years and older (For the Self-Report form)
  - The individual's spouse, parent or family member (For the Observer-Report Form)
- Data collection resulted in:

Form	General Population	ASD	Other Clinical
Self-Report	466	30	47
Observer-Report	452	22	26

43

Other Clinical Groups Included in the Pilot

- Attention Deficit Hyperactivity Disorder (ADHD)
- Major Depressive Disorder (MDD)
- Generalized Anxiety Disorder (GAD)
- Bipolar Disorder
- Obsessive Compulsive Disorder (OCD)
- Adjustment Disorder

44

Scales For the Adult ASRS 2 Pilot

- Atypical Language
- Attention
- Behavioral Rigidity
- Sensory Sensitivity
- Socialization
- Social/Emotional Reciprocity
- Stereotypy
- DSM 5 ASD

45

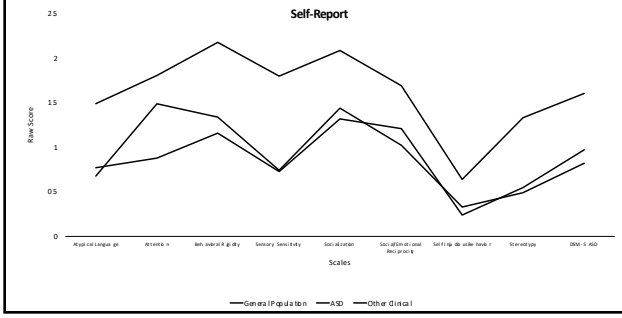
Scale Reliability

- **Summary of the Reliability of each scale as measured by Cronbach's alpha (**a measure of internal consistency, that is, how closely related a set of items are as a group).
- **Overall, the alpha values indicate high level of reliability for each scale.**

Scales	Self-Report		Observer-Report	
	General Population	Clinical	General Population	Clinical
Atypical Language	0.88	0.89	0.87	0.94
Attention	0.86	0.86	0.90	0.90
Behavioral Rigidity	0.90	0.94	0.93	0.91
Sensory Sensitivity	0.85	0.90	0.84	0.87
Socialization	0.85	0.92	0.86	0.90
Social/Emotional Reciprocity	0.90	0.93	0.91	0.94
Self-Injurious Behavior	0.86	0.79	0.90	0.82
Stereotypy	0.87	0.91	0.88	0.90
DSM-5 ASD	0.92	0.96	0.93	0.96

46

Clinical Group Differences (Raw scores)



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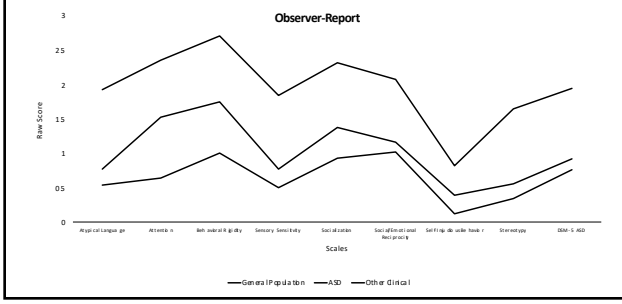
Clinical Group Differences (Raw scores)



48

Clinical Group Differences (Cohen's d)

Scales	Self-Report		Observer-Report	
	ASD vs. General Population	ASD vs. Other Clinical	ASD vs. General Population	ASD vs. Other Clinical
Atypical Language	1.21	1.36	2.46	1.38
Attention	1.66	0.49	2.93	1.24
Behavioral Rigidity	1.61	1.19	2.47	1.57
Sensory Sensitivity	1.74	1.60	2.39	1.91
Socialization	1.30	0.94	2.51	1.61
Social/Emotional Reciprocity	0.86	1.23	1.80	1.53
Self-Injurious Behavior	0.88	0.62	1.76	0.70
Stereotypy	1.34	1.31	2.62	1.62
DSM-5 ASD	1.49	1.70	2.67	2.36

d= 0.2-0.4 Small
d= 0.5-0.7 Med
d >=0.8 Large

For the most part, Large d-values are observed across comparisons, indicating the ability of the assessment to identify individuals with ASD

49

We are collecting data for additional new scales for the Adult ASRS 2 including camouflage or coping behaviors and anxiety.

50

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.

51

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.

52

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)?

53

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.

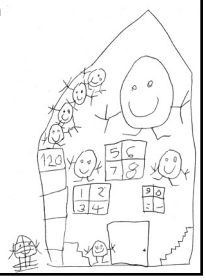
54

Educational Care and Treatment

55

Educational Care and Treatment

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



56

Prevalence and Treatment Patterns of Autism Spectrum Disorder in the United States, 2016

Of the 43 032 included participants, 22 072 (51.3%) were male, and the mean (SD) age was 10.7 (4.4) years. The weighted prevalence of ever-diagnosed ASD and current ASD were 2.79% (95% CI, 2.46-3.12) and 2.50% (95% CI, 2.21-2.79), respectively. The state-level prevalence of ever-diagnosed ASD varied from 1.54% (95% CI, 0.60-2.48) in Texas to 4.88% (95% CI, 2.72-7.05) in Florida. Nationally, about 70% of children with current ASD (70.5%; 95% CI, 65.1-75.8) were treated; 43.3% (95% CI, 37.4-49.2) received behavioral treatment only, 6.9% (95% CI, 3.7-10.1) received medication treatment only, and 20.3% (95% CI, 16.5-24.1) received both behavioral and medication treatments. The remaining 29.5% (95% CI, 24.2-34.9) of children with current ASD did not receive either behavioral or medication treatment.

doi:10.1001/jamapediatrics.2018.4208
December, 2018

57

Integrating Treatment for Autism: Psychiatric Comorbidities and Comprehensive Treatment

Autism Spectrum Disorder (ASD) treatment becomes more convoluted when additional mental disorders are present. Comorbidities with ASD discussed in this review include attention deficit hyperactivity disorder (ADHD), anxiety, depression, disruptive mood dysregulation disorder (DMDD), psychotic and bipolar disorder. As these disorders typically affect multiple endophenotypes, from genetics to behavior, treatment must aim to target multiple layers, all the while minimizing side effects. Evidence-based therapies for ASD and comorbidities can range from psychosocial interventions to psychotropic medicines, with a varying degree of effectiveness for pairings of comorbidities and combinations of treatment. This review aims to create a brief overview of ASD comorbidities and discuss treatment options based on prior evidence-based research. Appropriate treatment is dependent on specific symptomatology, but evidence suggests that integrative-targeted treatment is typically more effective than stand-alone treatments.

https://doi.org/10.17759/autdd.2021190105
January 2021

58

Interventions for improving employment outcomes for persons with Autism Spectrum Disorder: A systematic review update

The systematic review update identified three studies that evaluated employment outcomes for interventions for individuals with ASD. All three studies identified in the review suggest that vocation-focused programs may have positive impacts on the employment outcomes for individuals with ASD. Wehman et al. indicated that participants in Project SEARCH had higher employment rates than control participants at both 9-month and 1-year follow-up time points. Adding autism spectrum disorder supports, Project SEARCH in Wehman et al.'s study also demonstrated higher employment rates for treatment participants than control participants at postgraduation, 3-month follow-up, and 12-month follow-up. Smith et al. found that virtual reality job interview training was able to increase the number of job offers treatment participants received compared to control participants.

https://doi.org/10.1002/cl2.1185
July, 2021

59

Employment programs and interventions targeting adults with autism spectrum disorder: A systematic review of the literature

In this systematic review, empirical peer-reviewed studies on employment programs, interventions and employment-related outcomes in individuals with autism spectrum disorder over 18 years with and without intellectual disability were identified and evaluated.

From 32,829 records identified in the initial search, 10 review and 50 empirical articles, comprising N = 58,134 individuals with autism spectrum disorder, were included in the review. Selected articles were organized into the following themes: employment experiences, employment as a primary outcome, development of workplace skills, non-employment-related outcomes, assessment instruments, employer-focused and economic impact. Empirical studies were limited by poor participant characterization, small sample size and/or a lack of randomization and use of appropriate controls. Poor conceptualization and measurement of outcomes significantly limited study quality and interpretation.

Future research will require a multidisciplinary and multifaceted approach to explore employment outcomes on the individual, the family system, co-workers and the employer, along with the impact of individual differences on outcome.

DOI: 10.1177/1362361316661855 2017

60

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Effects of an employer-based intervention on employment outcomes for youth with significant support needs due to Autism

The purpose of this study was to develop and investigate an employer-based 9-month intervention for high school youth with autism spectrum disorder to learn job skills and acquire employment. The intervention modified a program titled Project SEARCH and incorporated the use of applied behavior analysis to develop Project SEARCH plus Autism Spectrum Disorder Supports.

A randomized clinical trial compared the implementation of Project SEARCH plus Autism Spectrum Disorder Supports with high school special education services as usual. Participants were 49 high-school-aged individuals between the ages of 18 and 21 years diagnosed with an autism spectrum disorder and eligible for supported employment. Students also had to demonstrate independent self-care. At 3 months post-graduation, 90% of the treatment group acquired competitive, part-time employment earning US$9.53–US$10.66 per hour. Furthermore, 87% of those individuals maintained employment at 12 months post-graduation. The control group's employment outcomes were 6% acquiring employment by 3 months post-graduation and 12% acquiring employment by 12 months post-graduation. The positive employment outcomes generated by the treatment group provide evidence that youth with autism spectrum disorder can gain and maintain competitive employment.

doi: 10.1177/1362361316635826. 2016

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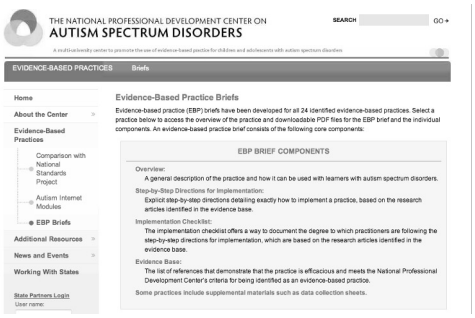
http://autismpdc.fpg.unc.edu/content/briefs



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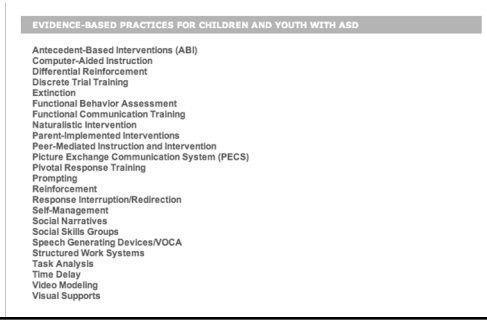
http://autismpdc.fpg.unc.edu/content/briefs



63

63

Components of an Effective Treatment Program

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

64

Medications

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

65

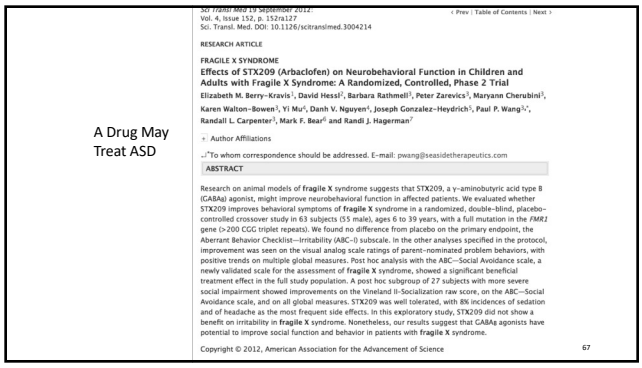
Medication Use in Youth With Autism and Attention-Deficit/Hyperactivity Disorder

Two thirds of children ages 6 to 11 and three quarters of youth ages 12 to 17 with ASD and ADHD were taking medication, similar to children (73%) and youth with ADHD-only (70%) and more than children (13%) and youth with ASD-only (22%). There were no correlates of medication use that were consistent across group and medication type. Youth with ASD and ADHD were more likely to be taking medication for emotion, concentration, or behavior than youth with ADHD-only, and nearly half took ASD-specific medication.

https://doi.org/10.1016/j.acap.2020.05.015 March 2021.

66

A Drug May Treat ASD



Sci Transl Med 19 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-Kravis[1], David Hessl[2], Barbara Rathmell[3], Peter Zarevics[3], Maryann Cherubini[3], Karen Walton-Bowen[3], Yi Mu[4], Danh V. Nguyen[4], Joseph Gonzalez-Heydrich[5], Paul P. Wang[3,*], Randall L. Carpenter[3], Mark F. Bear[6] and Randi J. Hagerman[7]

+ Author Affiliations

../*To whom correspondence should be addressed. E-mail: pwang@seasidetherapeutics.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 endpoint, 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.

67

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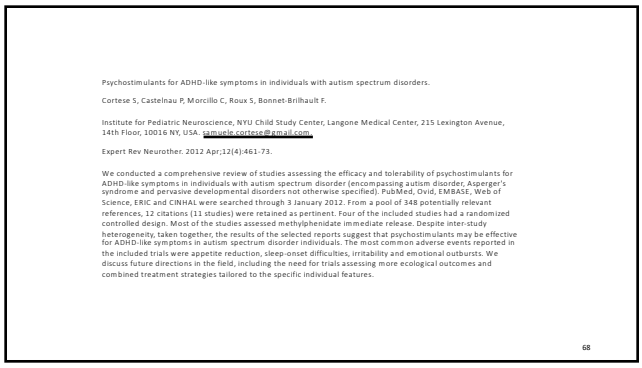

Psychostimulants for ADHD-like symptoms in individuals with autism spectrum disorders.

Cortese S, Castelnau P, Morcillo C, Roux S, Bonnet-Brilhault F.

Institute for Pediatric Neuroscience, NYU Child Study Center, Langone Medical Center, 215 Lexington Avenue, 14th Floor, 10016 NY, USA. samuele.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, Ovid, EMBASE, Web of Science, ERIC and CINHAL 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.

68

68

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)

69

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

70

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.

71

71

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, differing research paradigms used in relation to OT as an independent versus dependent variable, and the possibility that OT effects depend on the initial emotional state of the individual. Social and personality psychologists have important roles to play in developing more rigorous and creative research designs.

« Previous | Next Article »
Table of Contents

This Article

Published online before print April 30, 2010, doi: 10.1177/1088868310363594

Pers Soc Psychol Rev August 2010 vol. 14 no. 3 281-295

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72

72

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

MICHAELG. AMAN, PH.D., CHRISTOPHERJ. 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 ADOLESC. PSYCHIATRY, 48:12, DECEMBER 2009J.

73

73

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 Pediatr* 32:439–446, 2011) **Index terms:** autism spectrum, social skills, ADHD.

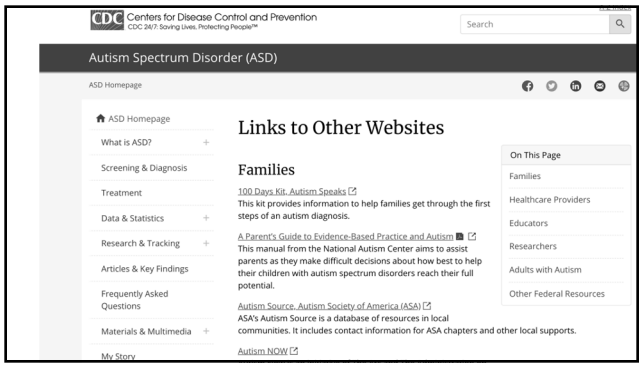
74

74

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.

75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CDC 24/7: Saving Lives, Protecting People™
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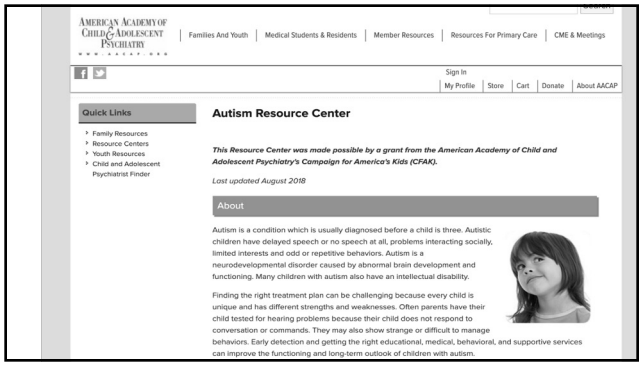
ASD Homepage
What is ASD?
Screening & Diagnosis
Treatment
Data & Statistics
Research & Tracking
Articles & Key Findings
Frequently Asked Questions
Materials & Multimedia
My Story
Links to Other Websites
Families
100 Days Kit, Autism Speaks
This kit provides information to help families get through the first steps of an autism diagnosis.
A Parent's Guide to Evidence-Based Practice and Autism
This manual from the National Autism Center aims to assist parents as they make difficult decisions about how best to help their children with autism spectrum disorders reach their full potential.
Autism Source, Autism Society of America (ASA)
ASA's Autism Source is a database of resources in local communities. It includes contact information for ASA chapters and other local supports.
Autism NOW
On This Page
Families
Healthcare Providers
Educators
Researchers
Adults with Autism
Other Federal Resources

76


American Academy of Child & Adolescent Psychiatry
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Resources For Primary Care
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Child and Adolescent Psychiatrist Finder
Autism Resource Center
This Resource Center was made possible by a grant from the American Academy of Child and Adolescent Psychiatry's Campaign for America's Kids (CFAK).
Last updated August 2018
About
Autism is a condition which is usually diagnosed before a child is three. Autistic children have delayed speech or no speech at all, problems interacting socially, limited interests and odd or repetitive behaviors. Autism is a neurodevelopmental disorder caused by abnormal brain development and functioning. Many children with autism also have an intellectual disability.
Finding the right treatment plan can be challenging because every child is unique and has different strengths and weaknesses. Often parents have their child tested for hearing problems because their child does not respond to conversation or commands. They may also show strange or difficult to manage behaviors. Early detection and getting the right educational, medical, behavioral, and supportive services can improve the functioning and long-term outlook of children with autism.

77


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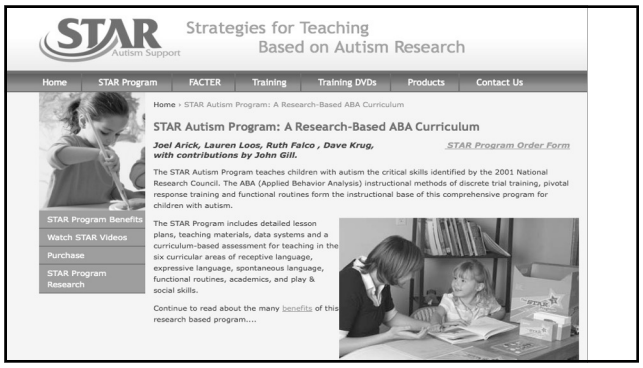
In 2006 the Autism Society launched Living with Autism which presents user-friendly information within four eye-catching pages. The series was developed to provide easy-to-understand, practical information related to the autism spectrum for a broad audience on a wide range of topics. The series will continually evolve, adding new pieces on a regular basis, and address topics across the spectrum and lifespan. Emphasis of all pieces in the series is on living successfully with autism, so articles will provide useful information, helpful tips and additional resources provided by those with expertise on the particular topic. The Living with Autism series is designed for individuals on the autism spectrum, their families, friends and concerned professionals.
Living With Autism

78



79

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.

80

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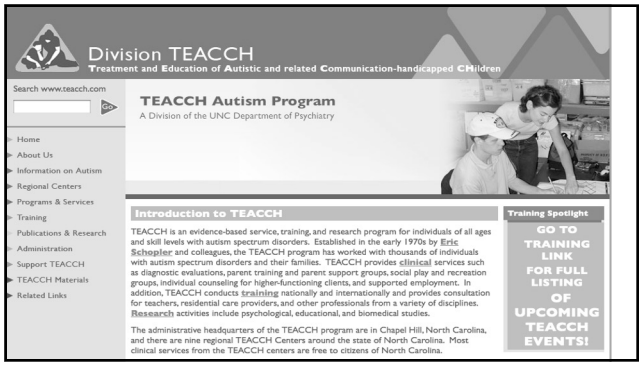

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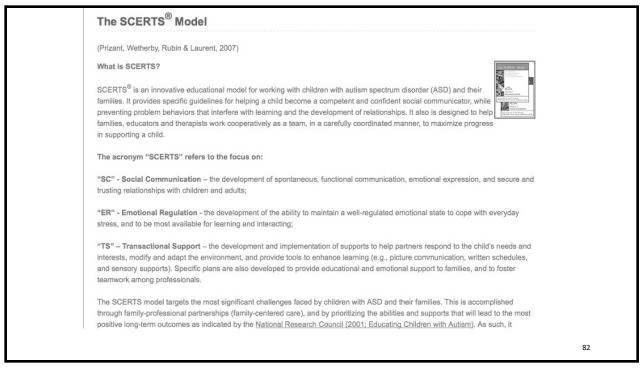


The SCERTS® Model

(Prizant, Wetherby, Rubin & Laurent, 2007)

What is SCERTS?

SCERTS® is an innovative educational model for working with children with autism spectrum disorder (ASD) and their families. It provides specific guidelines for helping a child become a competent and confident social communicator, while preventing problem behaviors that interfere with learning and the development of relationships. It also is designed to help families, educators and therapists work cooperatively as a team, in a carefully coordinated manner, to maximize progress in supporting a child.

The acronym "SCERTS" refers to the focus on:

"SC" - Social Communication – the development of spontaneous, functional communication, emotional expression, and secure and trusting relationships with children and adults;

"ER" - Emotional Regulation - the development of the ability to maintain a well-regulated emotional state to cope with everyday stress, and to be most available for learning and interacting;

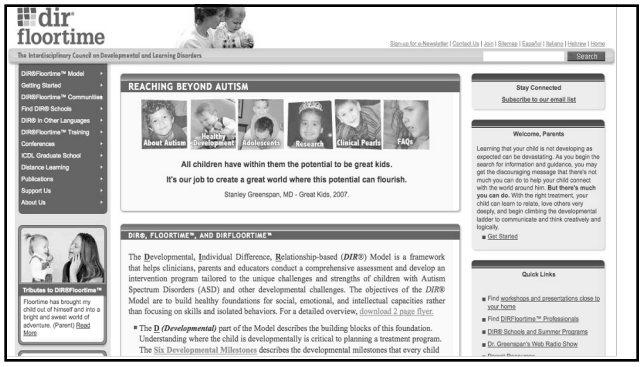
"TS" – Transactional Support – the development and implementation of supports to help partners respond to the child's needs and interests, modify and adapt the environment, and provide tools to enhance learning (e.g., picture communication, written schedules, and sensory supports). Specific plans are also developed to provide educational and emotional support to families, and to foster teamwork among professionals.

The SCERTS model targets the most significant challenges faced by children with ASD and their families. This is accomplished through family-professional partnerships (family-centered care), and by prioritizing the abilities and supports that will lead to the most positive long-term outcomes as indicated by the National Research Council (2001; Educating Children with Autism). As such, it

82

82

83



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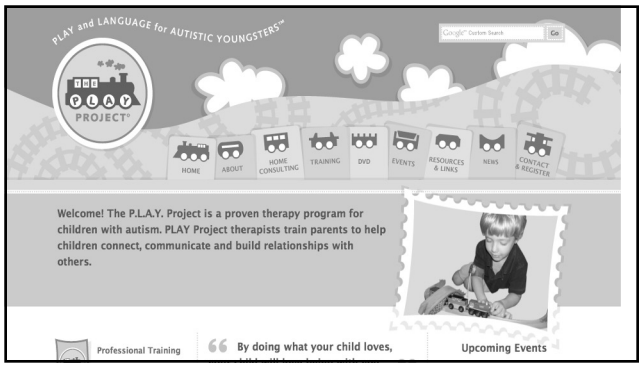
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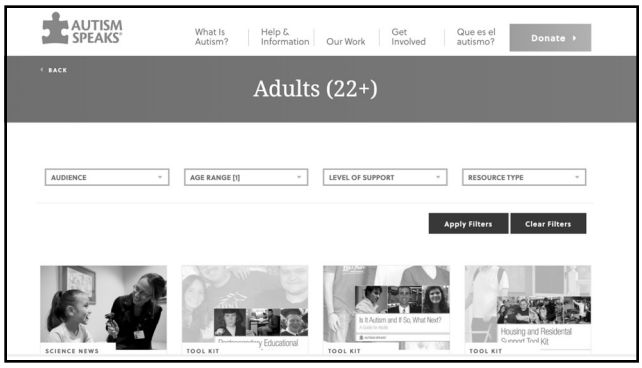
85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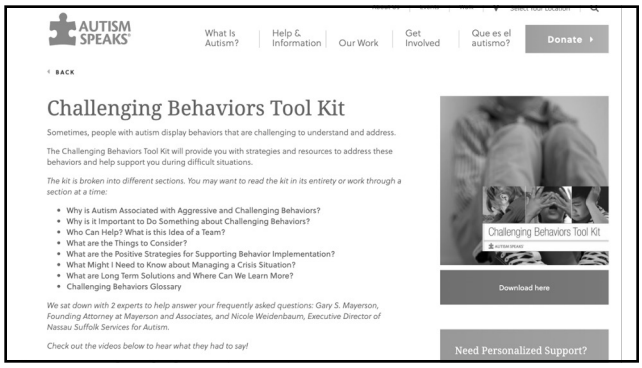
AGE RANGE [1]
LEVEL OF SUPPORT
RESOURCE TYPE
Apply Filters
Clear Filters
SCIENCE NEWS
TOOL KIT
TOOL KIT
TOOL KIT

86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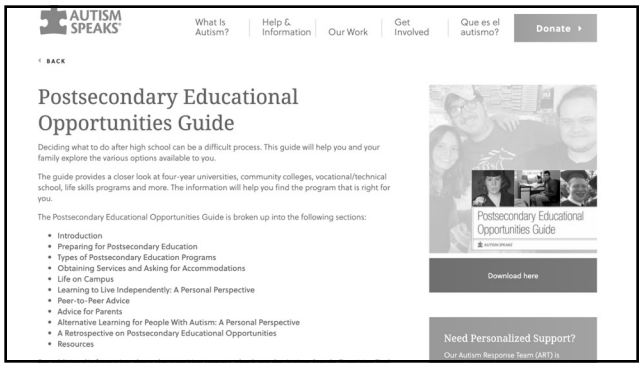
Challenging Behaviors Tool Kit
Sometimes, people with autism display behaviors that are challenging to understand and address.
The Challenging Behaviors Tool Kit will provide you with strategies and resources to address these behaviors and help support you during difficult situations.
The kit is broken 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!
Challenging Behaviors Tool Kit
Download here
Need Personalized Support?

87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Help & Information
Our Work
Get Involved
Que es el autismo?
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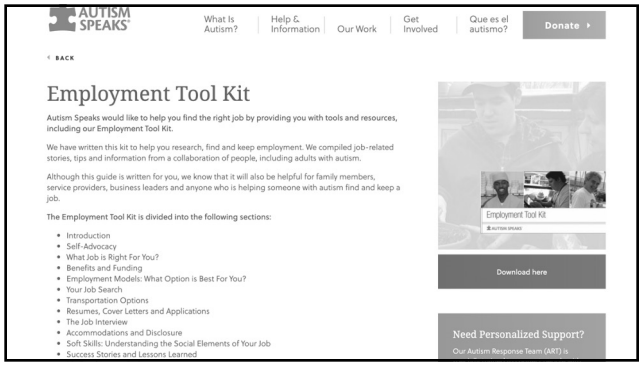
Postsecondary Educational Opportunities Guide
Deciding what to do after high school can be a difficult process. This guide will help you and your family explore the various options available to you.
The guide provides a closer look at four-year universities, community colleges, vocational/technical school, 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
Postsecondary Educational Opportunities Guide
Download here
Need Personalized Support?
Our Autism Response Team (ART) is

88


AUTISM SPEAKS
What Is Autism?
Help & Information
Our Work
Get Involved
Que es el autismo?
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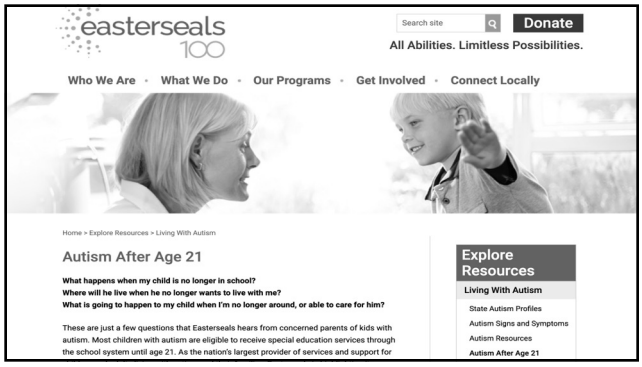
Employment Tool Kit
Autism Speaks would like to help you find the right job by providing you with tools and resources, including our Employment Tool Kit.
We have written this kit to help you research, find and keep employment. We compiled job-related stories, tips and information from a collaboration 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
Employment Tool Kit
Download here
Need Personalized Support?
Our Autism Response Team (ART) is

89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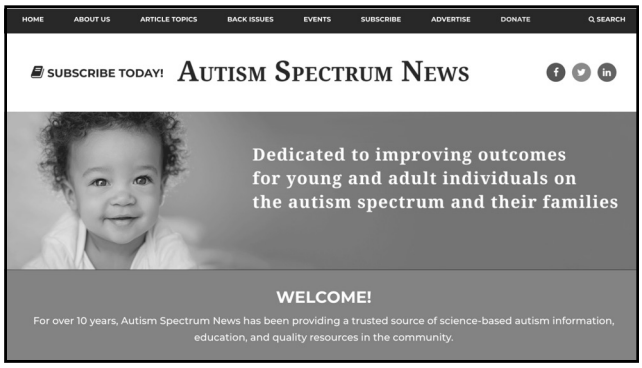
All Abilities. Limitless Possibilities.
Who We Are
What We Do
Our Programs
Get Involved
Connect Locally
Home > Explore Resources > Living With Autism
Autism After Age 21
What happens when my child is no longer in school?
Where will he live when he no longer wants to live with me?
What is going to happen to my child when I'm no longer around, or able to care for him?
These are just a few questions that Easterseals hears from concerned parents of kids with autism. Most children with autism are eligible to receive special education services through the school system until age 21. As the nation's largest provider of services and support for
Explore Resources
Living With Autism
State Autism Profiles
Autism Signs and Symptoms
Autism Resources
Autism After Age 21

90



91

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.

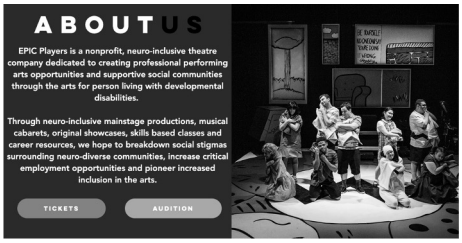
92

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.

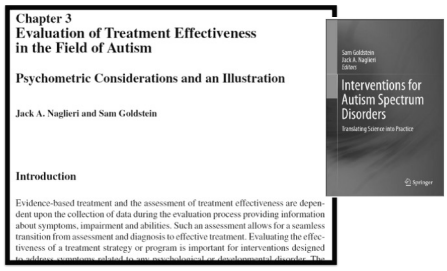
93

EPIC Players



94

Treatment Evaluation with ASRS



Chapter 3
Evaluation of Treatment Effectiveness in the Field of Autism

Psychometric Considerations and an Illustration

Jack A. Naglieri and Sam Goldstein

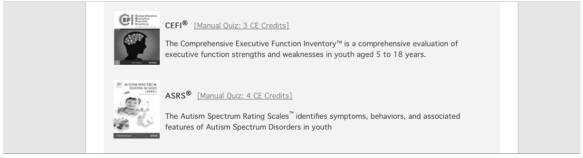
Introduction

Evidence-based treatment and the assessment of treatment effectiveness are dependent upon the collection of data during the evaluation process providing information about symptoms, impairment and abilities. Such an assessment allows for a seamless transition from assessment and diagnosis to effective treatment. Evaluating the effectiveness of a treatment strategy or program is important for interventions designed

95

95

Continuing Education



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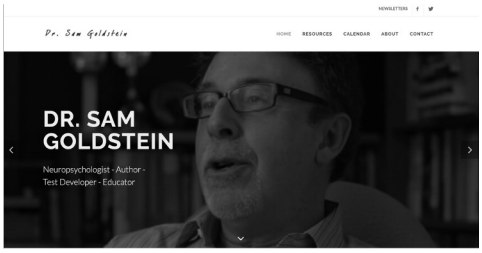

97

Devin Teichert
Song of Myself
December 16, 2008

Were They but There at Night

There is a bolder field where every stone
Is a glazed, 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 fragments 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 centerpiece of the field
For when night falls, the grey rock in the center
It glows in the dark

98

Questions?

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TEDx: https://www.youtube.com/watch?v=isfw8JJ-eWM

99