Pearson

Adaptive Behavior Profiles in Autism Spectrum Disorders

Celine A. Saulnier, PhD

Licensed Clinical Psychologist
Founder, Neurodevelopmental Assessment & Consulting Services

Vineland-3

Bio

Celine Saulnier, Ph.D., obtained her doctorate in Clinical Psychology from the University of Connecticut, after which she completed a postdoctoral fellowship and then joined the faculty at the Yale Child Study. At Yale, Dr. Saulnier worked closely with Drs. Ami Klin and Sara Sparrow investigating adaptive behavior profiles in ASD. In 2011, she relocated to the Marcus Autism Center & Emory University School of Medicine to help develop and direct a large-scale clinical research program. In June 2018, she left Marcus to develop her own diagnostic clinic and consulting company, Neurodevelopmental Assessment & Consulting Services, but remains an Adjunct Associate Professor at Emory. Dr. Saulnier has written two books, *Essentials of Autism Spectrum Disorders Evaluation and Assessment and Essentials of Adaptive Behavior Assessment of Neurodevelopmental Disorders,* and is co-author of the *Vineland Adaptive Behavior Scales, Third Edition.*

Disclosures

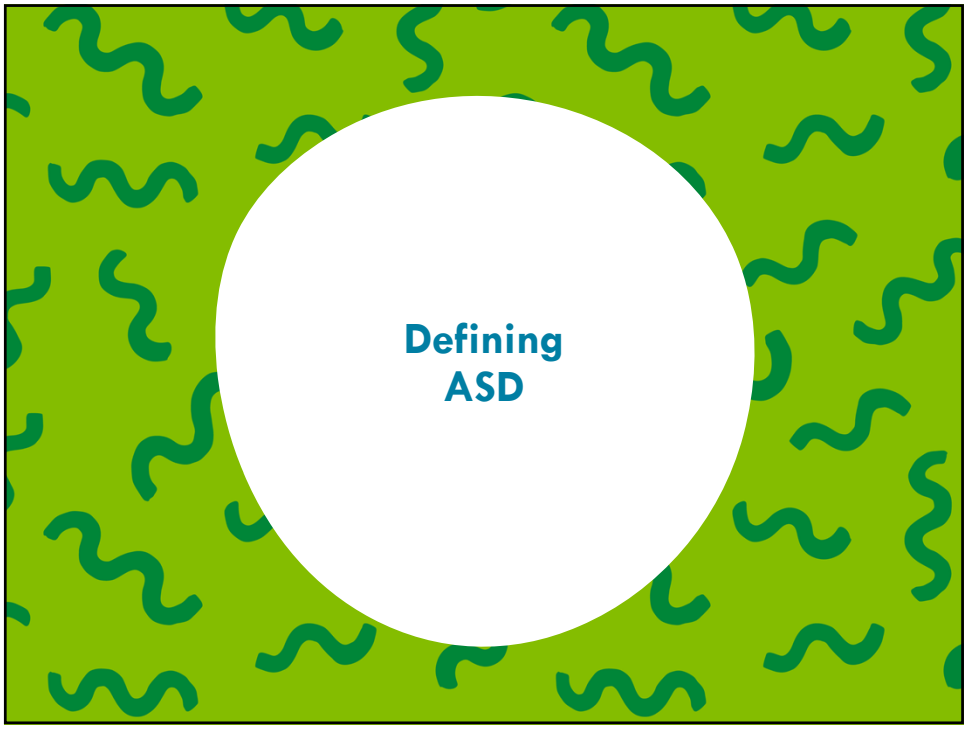
- As co-author of the *Vineland Adaptive Behavior Scales, Third Edition*, Dr. Saulnier receives royalties from Pearson
- As co-author of *Essentials of Autism Spectrum Disorders Evaluation and Assessment & Essentials of Adaptive Behavior Assessment of Neurodevelopmental Disorders*, Dr. Saulnier Receives royalties from Wiley

Pearson

Learning Objectives

1. Define adaptive behavior & differentiate adaptive behavior from cognition or ability
2. Describe common profiles of adaptive functioning in ASD for individuals with and without cognitive impairment
3. Identify effective treatment strategies for enhancing adaptive functioning

Pearson



Criteria for Autism Spectrum Disorder (299.0)
Diagnostic & Statistical Manual, 5th Edition (DSM-5)

A. Persistent deficits in social communication and interactions across multiple contexts, as manifested by the following *currently or by history*:

1. Deficits in social-emotional reciprocity
2. Deficits in nonverbal communication behaviors used for social interaction
3. Deficits in developing, maintaining, and understanding relationships, ranging, e.g., 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

Criteria for DSM-5
Autism Spectrum Disorder (299.0)

B. Restricted, repetitive patterns of behavior, interests, and activities, as manifested by at least TWO of the following, *currently or by history*:

1. Stereotyped or repetitive speech, motor movements, or use of objects
2. Excessive adherence to routines, ritualized patterns of verbal or nonverbal behavior, or excessive resistance to sameness
3. Highly restricted, fixated interests
4. Hyper- or hypo-reactivity to sensory input or unusual interest in sensory aspects of behavior

Criteria for DSM-5
Autism Spectrum Disorder (299.0)

C. Symptoms must be present in early childhood (but may not become fully manifest until social demands exceed limited capacities)

D. Symptoms cause clinically significant impairment in social, occupational, or other important areas of current functioning

E. Disturbances are not better explained by intellectual disability or global developmental delay.

Individuals with a well-established DSM-IV diagnosis of autistic disorder, Asperger's disorder, or PDD-NOS should be given the diagnosis of ASD

Clinical Specifiers for ASD (299.0)

1. With or without accompanying intellectual impairment
2. With or without accompanying language impairment ("no intelligible speech" vs. "phrase speech")
3. Associated with a known medical or genetic condition or environmental factor
4. Associated with another neurodevelopmental, mental, or behavioral disorder (can now include ADHD)
5. With Catatonia

Severity Levels for ASD (299.0)

Level 1: Requiring Support

Level 2: Requiring Substantial Support

Level 3: Requiring Very Substantial Support

Current Epidemiological Statistics for ASD

www.cdc.gov/ncbddd/autism

IN THE GENERAL POPULATION:

- 1 in 68 (More prevalent than all childhood cancers combined)
- Male-Female Ratio:
  - 4-5 times higher in boys
- Median Age of Diagnosis: 4-5 years
  - Much later for disadvantaged populations
- When ASD can be reliably diagnosed:
  - 18-24 months when diagnosed by experienced clinicians
- Comorbidity with Intellectual Disability:
  - 32%

IN SIBLINGS OF CHILDREN WITH ASD:

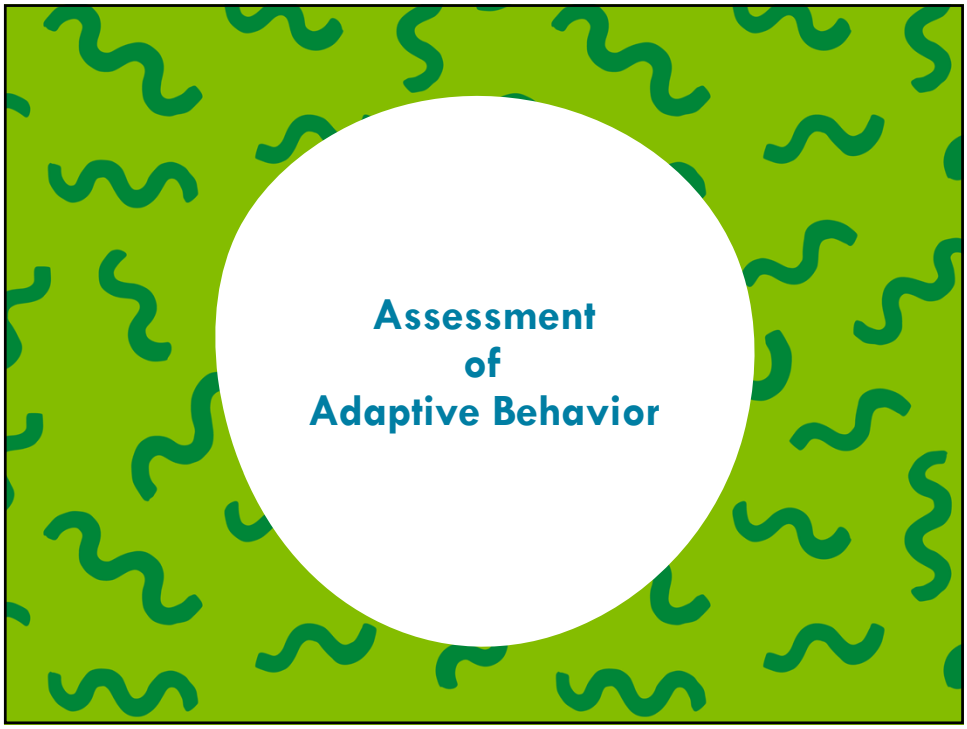
- ASD: 1 in 5 (~20% risk)
- Broader Autism Phenotype ("shadow symptoms"): *1 in 5*
- *Non-ASD developmental delays: 1 in 10*

Comprehensive Diagnostic Evaluations for ASD

Diagnostic Evaluations are Two-Fold:

1. Need for conducting a thorough developmental history
   - Parent/Caregiver report
   - Teacher report (older children)

2. Need for conducting direct testing with the child
   - Profile of developmental/cognitive skills
   - Profile of speech/language/communication skills
   - *Profile of adaptive behavior*
   - Direct observations of social-communication, play/interaction skills, & restricted, repetitive and unusual behaviors (i.e. diagnostic assessment for autism symptomatology)



Defining Intellectual Disability in the DSM-5

- Deficits in cognitive functioning ("scores of approximately two standard deviations or more below the mean")
- Deficits in adaptive functioning (e.g., communication, daily living, social participation, and independent living)
- Onset in the developmental period

Severity Levels: Defined by adaptive functioning rather than IQ level (different from DSM-IV)

- Mild
- Moderate
- Severe
- Profound

Pearson

Differentiating Cognitive Ability from Adaptive Functioning

- ***Cognitive ability*** is generally defined as an individual's repertoire of skills that are either innate or acquired.
  - Skills that an individual is *capable* of performing
- ***Adaptive Behavior*** is generally defined as performance of skills that are necessary for personal and social sufficiency.
  - Skills an individual *does* perform, *independently*, in daily activities and routines

Pearson

Characteristics of Adaptive Behavior

Age-related

Defined by the expectations/standards of others

Defined by typical performance, not ability

Modifiable (can change over time)

Adequate is the appropriate goal

Pearson

The Autism Spectrum

Levels of Cognitive Functioning

Cognitive Impairment

Seizures

Childhood Disintegrative Disorder

Medical Comorbidities

PDD-NOS

"High Functioning" Autism

Asperger Syndrome

Psychiatric Comorbidities




Pearson

The Autism Spectrum

Levels of Adaptive Functioning

Daily Living Skills (ADLs)

- *Dressing*
- *Bathing*
- *Toileting*
- *Feeding*
- *Mobility*
- *Medical management*

Functional Independence

- *Social Awareness*
- *Emotional Awareness*
- *Personal Care*
- *Career Development*
- *Community Navigation*
- *Financial Management*




Pearson

Vineland Adaptive Behavior Scales

(Sparrow, Balla, & Cicchetti, 1984 & 2005; Sparrow, Cicchetti, & Saulnier, 2016)

1. Interview Form*
2. Parent/Caregiver Form
3. Teacher Form

**Semi-structured interview with a caregiver is considered the Gold Standard*

Domains of Functioning (birth – 90 years)

- Communication: *Receptive; Expressive; Written*
- Daily Living: *Personal; Domestic; Community*
- Socialization: *Interpersonal; Play/Leisure; Coping*
- Motor: *Fine; Gross Motor*
- *Maladaptive Behavior Index*

Profiles of Adaptive Behavior

Profiles of Adaptive Behavior in ASD

Historically

Adaptive skills are often delayed & found to fall significantly below age & IQ in ASD

Volkmar et al., 1987; Carter et al., 1998; Klin et al., 2007

More Recently

Standard scores are found to be higher than IQ in children with intellectual disability & ASD

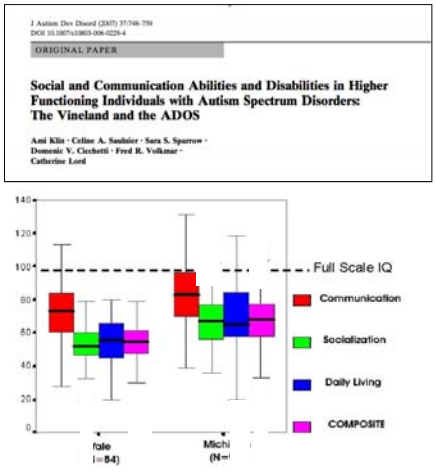
Perry et al., 2009; Kanne et al., 2010

Of Concern

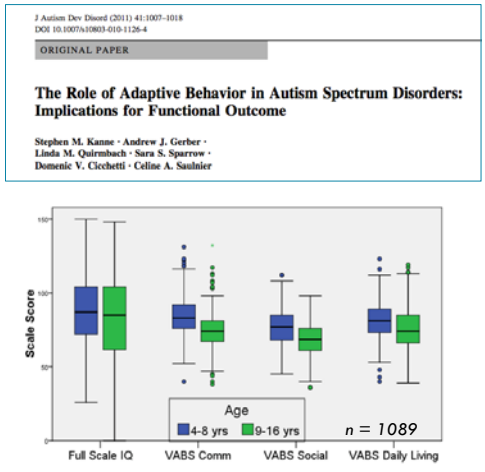
The gap between cognitive ability and adaptive functioning appears to widen with age

Klin et al., 2007; Saulnier & Klin, 2007; Kanne et al., 2010

Pearson



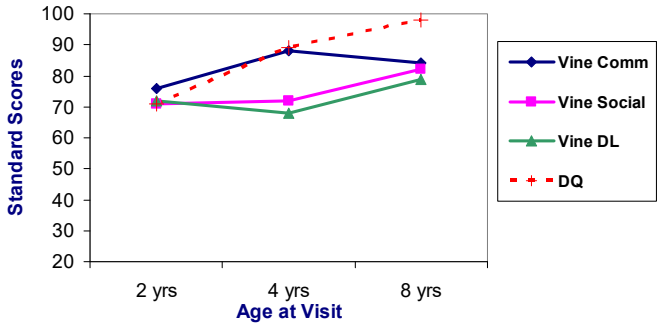
Adaptive skills fall significantly below cognition in 2 independent samples of boys ages 8 to 18 years



Older age group has significantly lower adaptive skills across all Vineland domains than the younger age group

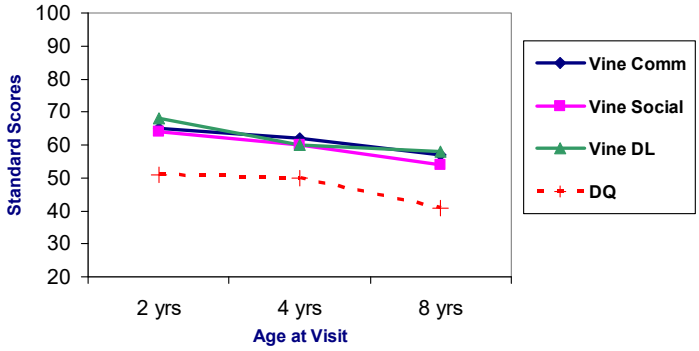
Pearson

Longitudinal Gap between Cognitive Potential and Adaptive Behavior – High Cognition



(Saulnier, Chawarska, & Klin, IMFAR 2011)

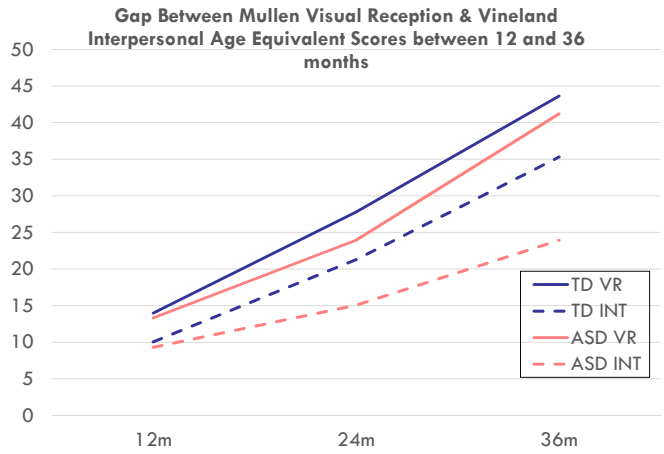
Longitudinal Gap between Cognitive Potential and Adaptive Behavior – Low Cognition



(Saulnier, Chawarska, & Klin, IMFAR 2011)

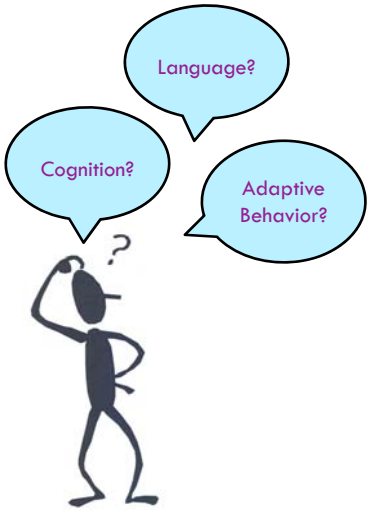
When does this gap begin?

(Bradshaw, Klaiman, Gillespie, Klin, & Saulnier, in preparation)



Infants who develop ASD:	n=16
Typically Developing (TD) Infants:	n=34

What Predicts "Good Outcome"



- Best predictors of good outcome = intact IQ and functional language by age 5
  Paul & Cohen, 1984; Howlin et al., 2004
- The majority of adults fail to achieve independent levels of employment and living, & fail to develop successful relationships
  Billstedt, Gillberg, & Gillberg, 2005; Eaves & Ho, 2008; Howlin et al., 2004
- Adaptive skills may be a better predictor of positive adult outcome than IQ and language level, alone
  Farley et al., 2009

Pearson

Social Outcomes in Mid- to Later Adulthood Among Individuals Diagnosed With Autism and Average Nonverbal IQ as Children

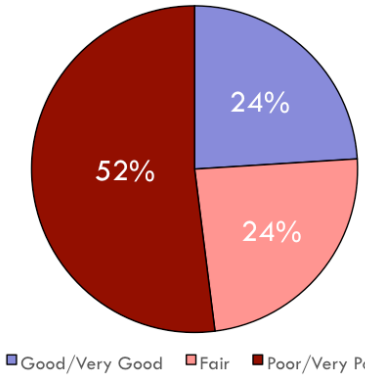
Journal of the American Academy of Child & Adolescent Psychiatry
VOLUME 52 NUMBER 6 JUNE 2013

Patricia Howlin, Ph.D., Philippa Moss, Ph.D., Sarah Savage, Ph.D., Michael Rutter, M.D.

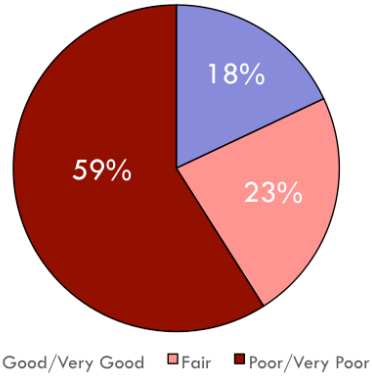
Outcome assessed by:

- *Educational Attainments*
- *Social Functioning*
- *Residential Status*
- *Occupation*
- *Friendships*

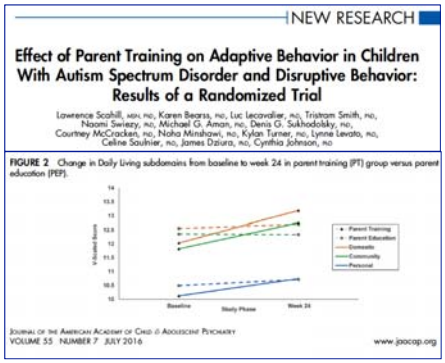
First Adult Assessment - Age 26 yrs



Second Adult Assessment – Age 46 yrs



The Impact of ASD Interventions on Adaptive Behavior



NEW RESEARCH

Effect of Parent Training on Adaptive Behavior in Children With Autism Spectrum Disorder and Disruptive Behavior: Results of a Randomized Trial

Lawrence Scahill, MSN, Ph.D., Karen Bearss, Psy.D., Luc Lecavalier, Ph.D., Tristram Smith, Ph.D., Naomi Swiezy, Ph.D., Michael G. Aman, Ph.D., Denis G. Sukhodolsky, Ph.D., Courtney McCracken, Ph.D., Nisha Minshawi, Ph.D., Kylan Turner, Psy.D., Lynne Levato, Psy.D., Celine Saulnier, Psy.D., James Dziura, Ph.D., Cynthia Johnson, Ph.D.

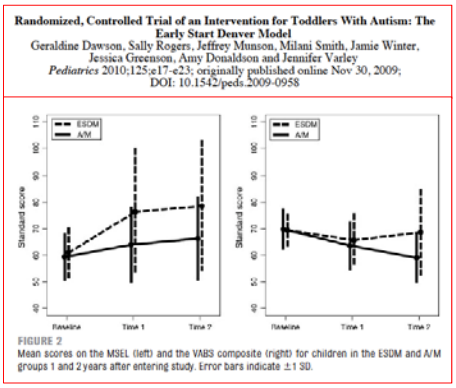
FIGURE 2 Change in Daily Living subdomains from baseline to week 24 in parent training (PT) group versus parent education (PEP).

Journal of the American Academy of Child & Adolescent Psychiatry
VOLUME 55 NUMBER 7 JULY 2016
www.jaacap.org

Effects of risperidone and parent training on adaptive functioning in children with pervasive developmental disorders and serious behavioral problems

Lawrence Scahill, MSN, Ph.D., Christopher J. McDougle, M.D., Michael G. Aman, Ph.D., Cynthia Johnson, Ph.D., Benjamin Handen, Ph.D., Karen Bearss, Ph.D., James Dziura, Ph.D., Eric Butter, Ph.D., Naomi B. Swiezy, Ph.D., L. Eugene Arnold, M. Ed., M.D., Kimberly A. Stigler, M.D., Denis D. Sukhodolsky, Ph.D., Luc Lecavalier, Ph.D., Stacie L. Pozdol, M.S., Roumen Nikolov, M.D., Louise Ritz, M.B.A., Jill A. Hollway, M.A., Patricia Korzekwa, PhD, Allison Gavaletz, B.S., Arlene E. Kohn, B.A., Kathleen Koenig, M.S.N., Stacie Grinnon, M.S., James A. Mulick, Ph.D., Sunkyung Yu, M.S., MPH, and Benedetto Vitiello, M.D., for the Research Units on Pediatric Psychopharmacology Autism Network

Pearson



Randomized, Controlled Trial of an Intervention for Toddlers With Autism: The Early Start Denver Model

Geraldine Dawson, Sally Rogers, Jeffrey Munson, Milani Smith, Jamie Winter, Jessica Greenson, Amy Donaldson and Jennifer Varley

Pediatrics 2010;125;e17-e23; originally published online Nov 30, 2009;
DOI: 10.1542/peds.2009-0958

FIGURE 2
Mean scores on the MSEL (left) and the VABS composite (right) for children in the ESDM and A/M groups 1 and 2 years after entering study. Error bars indicate ±1 SD.

J Autism Dev Disord (2011) 41:257–265
DOI 10.1007/s10803-010-1037-4

ORIGINAL PAPER

Effects of Cognitive Behavioral Therapy on Daily Living Skills in Children with High-Functioning Autism and Concurrent Anxiety Disorders

Amy Drahota · Jeffrey J. Wood · Karen M. Sze · Marilyn Van Dyke

How do we translate test results into meaningful recommendations for treatment, intervention, and functional independence into adulthood?

Pearson

IDEA Eligibility

Eligibility is not automatic with a diagnosis of ASD!

- The needs of the child must demonstrate an inability/impairment regarding "access to the general curriculum"
- This calls for attention to social & adaptive functioning in addition to academic functioning

Pearson

Vineland-II Assessment Scores & Interpretation

9 Year-old Male with Autism; Full Scale IQ = 119

Domains and Subdomains	Standard/ V-Scores	Percentile Rank	Adaptive Level	Age Equivalent
Communication	**81**	**10**	**Moderately Low**	
Receptive	10		Moderately Low	3 years, 7 months
Expressive	11		Moderately Low	5 years, 6 months
Written	14		Adequate	8 years, 10 months
Daily Living Skills	**85**	**16**	**Moderately Low**	
Personal	12		Moderately Low	6 years, 6 months
Domestic	13		Adequate	7 years, 5 months
Community	13		Adequate	8 years, 5 months
Socialization	**68**	**2**	**Low**	
Interpersonal Relationships	9		Low	2 years, 11 months
Play and Leisure Time	10		Moderately Low	4 years, 8 months
Coping Skills	8		Low	1 years, 11 months
Adaptive Behavior Composite	**76**	**5**	**Moderately Low**	

Though Communication & DLS may be in "average range", scores fall 2 SDs below IQ

Socialization scores fall substantially below both age and IQ

Also beware of high Written subdomain scores in comparison to significantly lower Receptive & Expressive scores. This profile often inflates the Communication Domain scores and reflects the affinity for numbers, letters, reading, & writing often observed in ASD

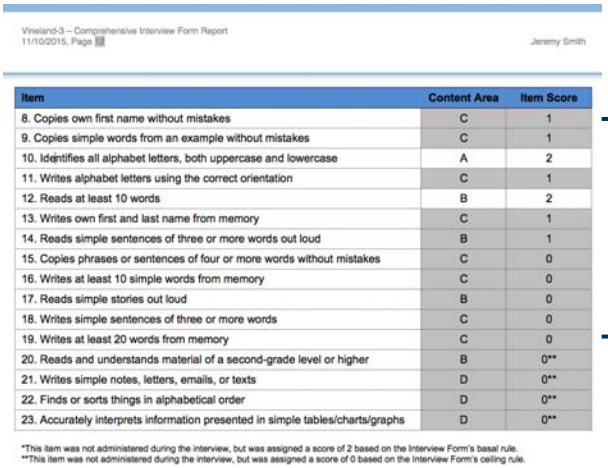
Pearson

Writing up Vineland Results in a Written Report

- Provide an overall summary of performance (ABC & Domain Standard Scores)
  - *Comparison to chronological age expectations*
  - *Comparison to mental-age expectations (i.e., IQ)*
- Provide description of Strengths & Weaknesses per subdomains
- Identify topic areas for intervention
  - *Dressing*
  - *Toileting*
  - *Conversation with peers*

Pearson

Intervention Guidance in the Vineland-3 Written Subdomain



Vineland-3 – Comprehensive Interview Form Report
11/10/2015, Page 12
Jeremy Smith

Item	Content Area	Item Score
8. Copies own first name without mistakes	C	1
9. Copies simple words from an example without mistakes	C	1
10. Identifies all alphabet letters, both uppercase and lowercase	A	2
11. Writes alphabet letters using the correct orientation	C	1
12. Reads at least 10 words	B	2
13. Writes own first and last name from memory	C	1
14. Reads simple sentences of three or more words out loud	B	1
15. Copies phrases or sentences of four or more words without mistakes	C	0
16. Writes at least 10 simple words from memory	C	0
17. Reads simple stories out loud	B	0
18. Writes simple sentences of three or more words	C	0
19. Writes at least 20 words from memory	C	0
20. Reads and understands material of a second-grade level or higher	B	0**
21. Writes simple notes, letters, emails, or texts	D	0**
22. Finds or sorts things in alphabetical order	D	0**
23. Accurately interprets information presented in simple tables/charts/graphs	D	0**

*This item was not administered during the interview, but was assigned a score of 2 based on the Interview Form's basal rule.
**This item was not administered during the interview, but was assigned a score of 0 based on the Interview Form's ceiling rule.

Item Scores of 0 /1 are shaded to highlight skills that need improvement

Use Content Areas to identify intervention targets by topic (e.g., B & C)

Written Subdomain Content Areas
A = Pre-reading
B = Developing Reading Skills
C = Developing Writing Skills
D = Applying Reading & Writing Skills

Pearson

Transition Planning:

National Autism Indicators Report: Transition into Young Adulthood, 2015

- IDEA recommends transition planning to "start before the student turns 16"
- 58% of youth with autism had a transition plan in place by the federally required age
- 60% parents participated in transition planning
- Over 80% of parents felt planning was useful
- 1/3 of autistic youth who were capable of responding to survey said they wanted to be more involved in transition planning

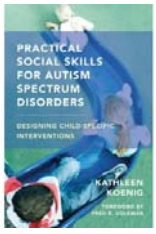
Pearson

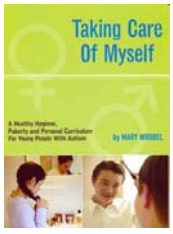
Transition Planning (Think "Adaptive Development")

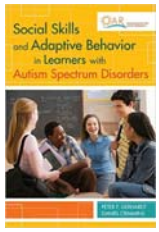
- START EARLY!!!! Upon diagnosis of ASD!
- Focus on individual's areas of strength & interest
  - Ensure that circumscribed interests/perseverations do not become all-consuming & interfere with functioning
- Goals need to be included in the IEP
- Goals need to be age/capacity appropriate and measurable
- Involve the individual in the planning
- Identify necessary accommodations
- Expose the individual to a variety of activities that will prepare for successful college and/or vocational placement, as well as independent and successful community living and social relationships
- ***MAKE EVERYTHING FUNCTIONAL & MEANINGFUL!!!!***

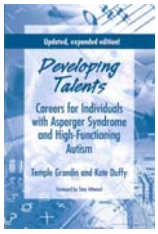
Pearson

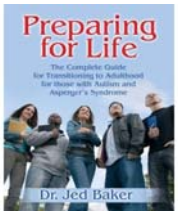
Recommended Resources











Adaptive Living Skills Curriculum
(Bruininks, Morreau, Gilman, & Anderson):

- Employment Skills
- Community Living Skills
- Home Living Skills
- Personal Living Skills

Infancy – 40+ years

Acknowledgments

Ami Klin, PhD

Sara Sparrow, PhD

Domenic Cicchetti, PhD

Diane Goudreau, M.Div.

John Kamp, PhD





Many thanks to all the children and families that contribute to our knowledge and understanding of adaptive behavior!

Thank you for attending!

Questions?


ALWAYS LEARNING