

# Adaptive Behavior Profiles in Autism Spectrum Disorders

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### Disclosures for Dr. Saulnier



- Royalties:
  - Wiley, Inc.
  - Pearson Clinical
- Consulting on Clinical Trials:
  - Holland Bloorview Kids Rehabilitation Hospital
  - Ovid Therapeutics
  - Takeda Pharmaceuticals
  - Rare Disease Research
  - Roche Pharmaceuticals
  - Yamo Pharmaceuticals



# Learning Objectives



### This session will help participants:

- Define adaptive behavior & differentiate adaptive behavior from cognition or ability
- Identify common profiles of adaptive functioning in ASD for individuals with and without cognitive impairment
- Discuss how Vineland-3 results can inform treatment goals to enhance adaptive functioning

## Pearson Clinical Assessment Disclosure

Pearson Clinical Assessment, the sponsor of this webinar, develops and distributes assessments and intervention tools for educators, occupational therapists, speechlanguage pathologists, and psychologists.

The presenter will cover information that pertains to the effective and appropriate use of the Vineland Adaptive Behavior Scales-3<sup>rd</sup> Edition, developed by Pearson Clinical Assessment.

No other assessments will be discussed during this presentation



### DSM-5 Criteria for ASD (299.0): Social Communication & Interaction



- A. Persistent deficits in social communication and interaction across multiple contexts, as manifested by the following *currently or by history*:
  - Deficits in social-emotional reciprocity
  - 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



### DSM-5 Criteria for ASD (299.0): Restricted & Repetitive Behaviors



- B. Restricted, repetitive patterns of behavior, interests, and activities, as manifested by <u>at least TWO</u> of the following, <u>currently</u> or <u>by history</u>:
  - 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



## DSM-5 Criteria for ASD (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



### Clinical Specifiers for ASD



- 1. With or without accompanying intellectual impairment (this is different from ID)
- 2. With or without accompanying language impairment (no intelligible speech; phrase speech; fluent speech)
- 3. Associated with a known medical or genetic condition or environmental factor
- 4. Associated with another neurodevelopmental, mental, or behavioral disorder (e.g., ADHD)
- 5. With Catatonia



### Severity Levels for ASD:



### Level 3: Requiring Very Substantial Support

- Severe deficits in verbal & nonverbal communication
- RRBs markedly interfere with functioning in all contexts

### Level 2: Requiring Substantial Support

- Marked deficits in verbal & nonverbal communication
- Social impairments apparent even with supports in place
- RRBs are obvious & interfere with functioning in some contexts

### Level 1: Requiring Support

- Social communication deficits cause noticeable impairments without supports in place
- RRBs significantly interfere in one or more contexts
- Problems with organization and planning hamper independence



# Current Epidemiological Statistics



www.cdc.gov/ncbddd/autism/addm

#### IN THE GENERAL POPULATION:

- 1 in 54 (1.85%)
- Male-Female Ratio:
  - 4 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
- Comorbid Intellectual Disability:
  - 33% with ID (with almost 50% having average to above average IQs)
  - 84% of 4-year-old children received an evaluation by age 3

#### 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



# The Autism Spectrum by Cognition



### Levels of Cognitive Functioning



Cognitive Impairment
Language Impairment
Seizures
Medical Comorbidities

In-tact Cognition
In-tact Language
Asperger Syndrome
Psychiatric Comorbidities











# Comprehensive Evaluations for ASD



- Screeners
- Assessment of Developmental/Cognitive & Speech, Language, & Communication Skills
- Assessment of Adaptive Behavior
- Diagnostic History
- Diagnostic Assessment
- Record Review



# Assessing for Intellectual Disability



- Deficits in <u>cognitive functioning</u> ("scores of approximately two standard deviations or more below the mean")
- Deficits in <u>adaptive functioning</u> (e.g., communication, daily life, social participation, and independent living)
- Onset in the developmental period
- <u>Severity Levels</u>: Defined by adaptive functioning rather than IQ level
  - Mild
  - Moderate
  - Severe
  - Profound

Now Keyed into Adaptive Functioning/ Level of Independence Rather than Cognitive Level



Developing behavioural indicators for intellectual functioning and adaptive behaviour for ICD-II disorders of intellectual development

M. J. Tassé, <sup>1</sup> © G. Balboni, <sup>2</sup> © P. Navas, <sup>3</sup> © R. Luckasson, <sup>4</sup> M. A. Nygren, <sup>5</sup> C. Belacchi, <sup>6</sup> © S. Bonichini, <sup>7</sup> © G. M. Reed<sup>8,9</sup> & C. S. Kogan <sup>10</sup>



Journal of Intellectual Disability Research

VOLUME 63 PART 5 MAY 2019

M. J. Tassé et al. • Behavioural indicators

Table 2 Behavioural indicators of intellectual functioning

Severity level	Early childhood (Determination of severity should be reassessed after appropriate educational services and supports are provided)	Childhood and adolescence (Determination of severity should be reassessed after appropriate educational services and supports are provided)	Adulthood (Determination of severity should be reassessed after appropriate educational services and supports are provided)
Mild	By the end of this developmental period:  • Most will develop language skills and be able to communicate needs. Delays in the acquisition of language skills are typical and, once acquired, are frequently less developed than typically developing peers (e.g. more limited vocabulary).	During this developmental period, there is evidence of the emergence of or presence of the abilities listed below.  • Most can communicate effectively.  • Most can tell or identify their age.  • Most can initiate/invite others to participate in an activity.  • Most can communicate about past, present and future events.	<ul> <li>Most can communicate fluently.</li> <li>Many can tell or identify their birth date.</li> <li>Most can initiate/invite others to participate in an activity.</li> <li>Most can communicate about past, present and future events.</li> <li>Most can attend to and follow up to three-step instructions.</li> <li>Most can identify different denominations of money (e.g. coins)</li> </ul>



# Differentiating Cognition from Adaptive Behavior



- <u>Cognitive ability</u> 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 <u>does</u> perform, <u>independently</u>, in daily activities and routines
  - It's the "does do" not the "can do"!



# 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





# The Importance of the Clinical Interview



 Edgar Doll (Vineland Social Maturity Scale) and Sara Sparrow (Vineland Adaptive Behavior Scales) both believed that a <u>semi-structured interview</u> between a professional and a caregiver provides more accurate and comprehensive information about adaptive behavior than a checklist.



- Helps to differentiate the "can do" from the "does do"
- The test items <u>are not</u> read to the respondent; rather, open-ended questioning is used to probe for the true frequency and independent application of behaviors.
- Involvement of a trained interview protects against potential sources of inaccuracy
  - Misunderstanding of item content/scoring rules
  - Deliberate or unintentional over- or underreporting



## Vineland Adaptive Behavior Scales

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



#### Domains of Functioning (birth – 90 years)

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



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

## Overview of the Vineland-3

(Sparrow, Cicchetti, & Saulnier, 2016)



	Interview Form		Parent/Caregiver Form		Teacher Form	
	Comprehensive	Domain-Level	Comprehensive	Domain-Level	Comprehensive	Domain-Level
Core Adaptive Scores	3 Domains 9 Subdomains	3 Domains	3 Domains 9 Subdomains	3 Domains	3 Domains 9 Subdomains	3 Domains
	Overall ABC					
Optional Domains	Motor Skills  Maladaptive Behavior					
Age Range	Birth to 90+	3 to 90+	Birth to 90+	3 to 90+	3 to 21	3 to 21
Total Item Count (typically not all are completed)	502	195	502	180	333	149
Completion Time (minutes)	35 - 40	23 - 27	20 - 25	10 - 15	15 - 20	8 - 10



# 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

Tilmann et al., 2019; Kanne et al., 2010; Perry et al., 2009

### Of Concern

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

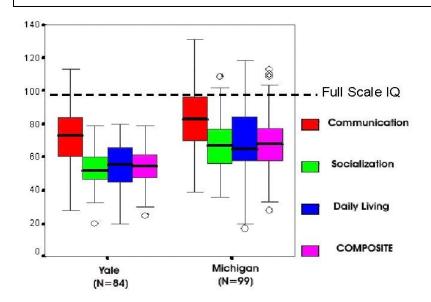
Klin et al., 2007; Saulnier & Klin, 2007; Kanne et al., 2010

J Autism Dev Disord (2007) 37:748-759 DOI 10.1007/s10803-006-0229-4

#### ORIGINAL PAPER

Social and Communication Abilities and Disabilities in Higher Functioning Individuals with Autism Spectrum Disorders: The Vineland and the ADOS

Ami Klin · Celine A. Saulnier · Sara S. Sparrow · Domenic V. Cicchetti · Fred R. Volkmar · Catherine Lord



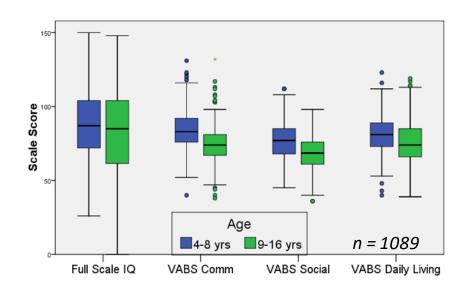
Adaptive skills fall significantly below cognition in 2 independent samples of boys ages 8 to 18 years

J Autism Dev Disord (2011) 41:1007-1018 DOI 10.1007/s10803-010-1126-4

#### ORIGINAL PAPER

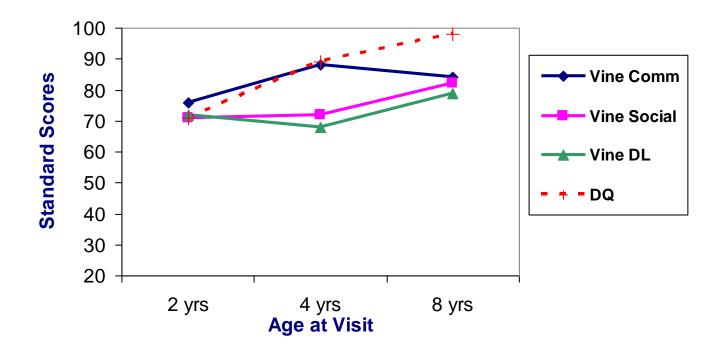
The Role of Adaptive Behavior in Autism Spectrum Disorders: Implications for Functional Outcome

Stephen M. Kanne · Andrew J. Gerber · Linda M. Quirmbach · Sara S. Sparrow · Domenic V. Cicchetti · Celine A. Saulnier



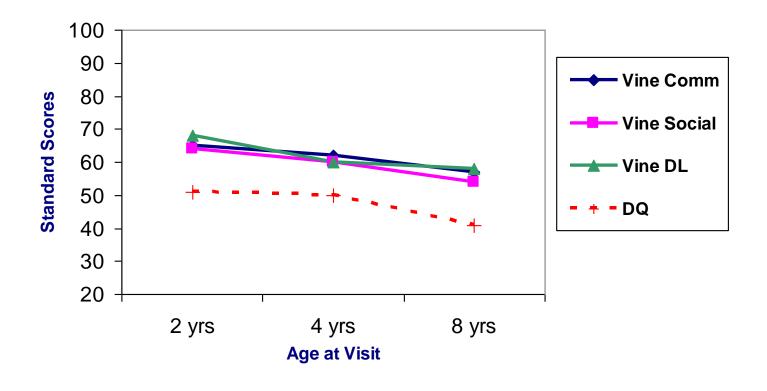
Older age group has significantly lower adaptive skills across all Vineland domains than the younger age group

# 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)

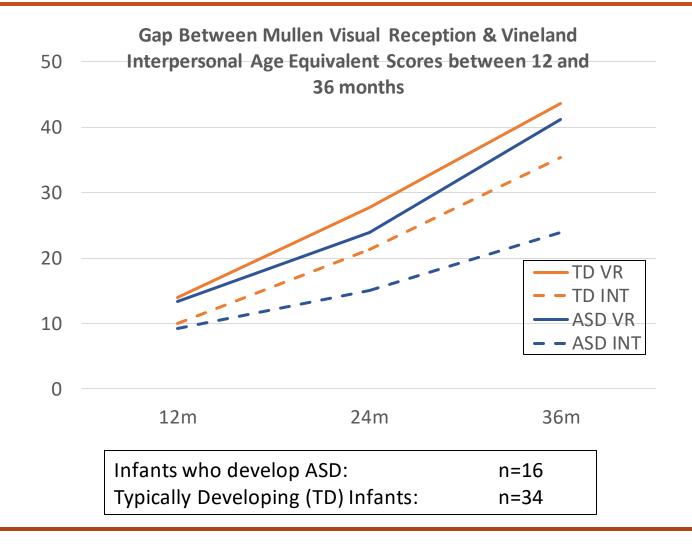


When the Gap Begins

Early emergence of discrepancy in adaptive behavior and cognitive skills in toddlers with autism spectrum disorder Autusm
2019, Vol. 23(6) 1485–1496
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DOI: 10.1177/1362361318815662
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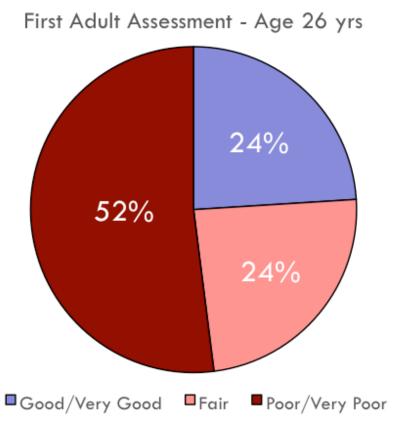
Jessica Bradshaw<sup>1</sup>, Scott Gillespie<sup>2</sup>, Cheryl Klaiman<sup>2</sup>, Ami Klin<sup>2</sup> and Celine Saulnier<sup>2,3</sup>

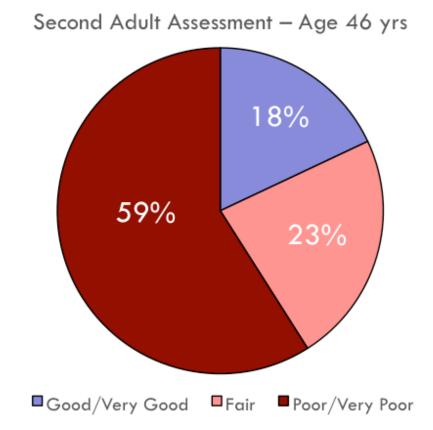


Patricia Howlin, Ph.D., Philippa Moss, Ph.D., Sarah Savage, Ph.D., Michael Rutter, M.D.

#### Outcome assessed by:

- Educational Attainments
   Residential Status
   Friendships
- Social Functioning
  - Occupation

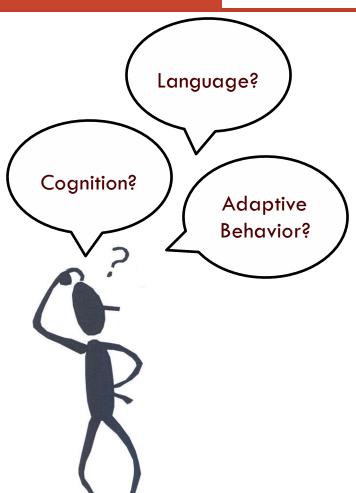






# What Predicts Good Outcome?





- Best predictors of good outcome = intact cognition and functional language by age 5
   Paul & Cohen, 1984; Howlin et al., 2004
- Many adults fail to achieve independent levels of employment and living, and struggle 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



# Do cognition & speech, alone, really indicate "high functioning"?



Original Article



autism

Autism
I-I2
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DOI: 10.1177/1362361319852831
journals.sagepub.com/home/aut



Gail A Alvares<sup>1</sup>, Keely Bebbington<sup>1</sup>, Dominique Cleary<sup>1</sup>, Kiah Evans<sup>1</sup>, Emma J Glasson<sup>1</sup>, Murray T Maybery<sup>1</sup>, Sarah Pillar<sup>1</sup>, Mirko Uljarević<sup>2</sup>, Kandice Varcin<sup>1</sup>, John Wray<sup>3</sup> and Andrew JO Whitehouse<sup>1</sup>



# Optimal Outcome (Fein et al., 2013, *JCPP*)

#### OURNAL .. CHILD PSYCHOLOGY AND PSYCHIATRY



Journal of Child Psychology and Psychiatry 54:2 (2013), pp 195-205

doi:10.1111/jcpp.12037

#### Optimal outcome in individuals with a history of autism

Deborah Fein, 1,6 Marianne Barton, 1 Inge-Marie Eigsti, 1 Elizabeth Kelley, 2 Letitia Naigles, 1 Robert T. Schultz, 3 Michael Stevens, 4 Molly Helt, 1 Alyssa Orinstein, 1 Michael Rosenthal, 5 Eva Troyb, 1 and Katherine Tyson 1

Department of Psychology, University of Connecticut, Storrs, CT, USA; Department of Psychology, Queens University, Kingston, ON, Canada; 3Center for Autism Research, Children's Hospital of Philadelphia, PA, USA; Institute of Living, Hartford Hospital, Hartford, CT, USA; 5Child Mind Institute, NY, USA; 6Department of Pediatrics, University of Connecticut, Farmington, CT, USA

#### 'Optimal Outcomes' Rare but Real in Autism



Study confirms that a tiny subset of children entirely overcome disabilities; intensive early therapy may be key

December 01, 2013

A "Top Ten Advances in Autism Research 2013" Selection See all the year's "Top Ten" here.



#### RESEARCHING THE LOSS OF AUTISM DIAGNOSES

Psychologist Deborah Fein PhD has probably done more to document this phenomenon than anyone. She first noticed that some of the children she was following no longer met the criteria for autism. "I was definitely very surprised," she recalled. Like most clinicians, she believed autism was a lifelong condition. For her research, she sought out other children who also left their autism diagnosis behind.

She and her co-researchers meticulously documented the diagnoses of 34 children with autism, and their loss of those diagnoses and autistic symptoms. They tested their communication, reading comprehension, academics, language, and social abilities, even their ability to recognize faces. They compared them to two other groups, 44 people with "highfunctioning autism," and 34 people who developed typically, called controls. High-functioning autism usually refers to autism with average or "normal" intelligence.







## Online Administration of the Vineland-3 Q-Global

- Options for online completion of all 3 forms COMPUTER OR TABLET
- Q-global will automatically keep track of basal, ceiling, and subdomain completion rules
- INTERVIEW FORM:
  - Process is the same as Vineland-II
  - BUT Q-global conveniently organizes items with related content by topic
  - Interview Topics include 2 to 6 items
  - All information for the items within an Interview Topic is displayed on a single screen
  - Q-global automatically tracks basals and ceilings



# Conducting a Semi-Structured Interview

Use openended questioning

Use information from respondent to score items

DO NOT

Read items to respondent

Ask respondent to provide item scores



## Vineland-3 Results



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	76	5	Moderately Low	
Composite				

Communication & DLS scores fall below age-expectations - should be average given high IQ

Socialization scores fall substantially below both age and IQ

**NOTE:** 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

## Fostering Adaptive Behavior



### Levels of <u>Adaptive</u> 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



# The Impact of ASD Interventions on Adaptive Behavior

Risperidone & Parent Training improve adaptive skills in ASD

Scahill et al., 2016; 2012; 2009; Bearss et al., 2015; Williams et al., 2006

 Early intensive behavioral interventions (EIBIs) are effective in improving adaptive skills children with ASD

Warren et al., 2011

 Early Start Denver Model is effective in improving adaptive skills in toddlers with ASD

Estes et al., 2015; Dawson et al., 2010

 Inclusion of toddlers in community-based programs can produce improvements in adaptive skills

Stahmer, Akshoomoff, & Cunningham, 2011

 Adaptive skill instruction within intervention is highly associated with positive outcome in adults with unimpaired baseline IQs

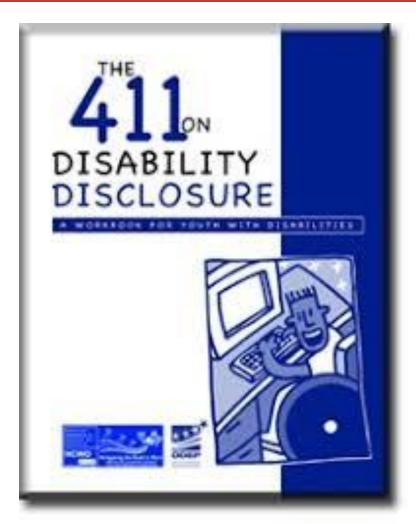


# Enhance Self-Advocacy www.ncwd-youth.info

- Encourage individuals to speak up for themselves and contribute to their life decisions
- Teach individuals their rights in different educational settings and in the workplace
- Know how and when to ask for accommodations
- Know how to navigate the community and access services and supports needed
- Encourage support networks that can help advocate



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## **COVID-19 Assessments**



# How Do We Do All of This? Remotely and/or With PPE?





### Remote & In-Person Options: Standardized Assessments



- Standardized Assessments were not normed via telehealth or with examiners/examinees wearing PPE!
- Need to use clinical judgment in estimating validity of findings
- If possible, compare findings to prior testing results and diagnostic impressions
- "New Normal": If you are in a position to contribute data to those conducting research on telehealth and/or PPE, please contribute!



### Remote Assessment Options:

www.pearsonassessments.com/professionalassessments/digitalsolutions/telepractice



GFTA-3 Spanish >	BSI 18 >	PLS-5 Screening Test >	
KTEA-3 >	BSS >	PLS-5 Spanish Screening Test >	
PLS-5 >	BYI-2 >	QOLI >	
PLS-5 Spanish >	D-REF >	SCL-90-R >	
PPVT-4 >	M-PACI >	Shaywitz DyslexiaScreen >	
PPVT-5 >	MACI-II >	Sensory Profile 2 >	
WAB-R >	MAPI >	SSIS SEL >	
WAIS-IV >	MBMD >	Vineland-3 >	
WIAT-III >	Interventions	Q-global Resource Library	
WISC-V >	BOV-2 >	Free access ends August 15th! Enjoy a 50% discount on Q-g assets through 12/31/2020	
WMS-IV >	Cogmed >	Learn more	



# www.pearsonassessments.com/professional -assessments/digitalsolutions/telepractice



# Administering the Vineland-3 via telepractice

## Special recommendations for administering Vineland-3 via telepractice

The Vineland-3 can be administered in a telepractice context by utilizing Pearson's Q-Global® software system. Details regarding the Q-global system and how it is used are provided on the Q-global product page.

The Vineland-3 is available in three administration forms: The Interview Form, The Parent/Caregiver Form, and the Teacher Form. Each form has a Comprehensive version and a Domain version. Please refer to the Vineland-3 Manual to help with decisions regarding which forms are appropriate for each client/referral question.

For telepractice, the Interview Form must be conducted with the informant via video-conferencing, with the examiner using Q-Global On-Screen Administration (OSA) to guide the interview and score responses. It is important to note that the Vineland-3 Interview Form was not standardized in a telepractice format, and this should be taken into consideration when determining the use of this measure for telepractice administration. The Parent/Caregiver and Teacher Forms are administered through Q-global Remote On-Screen Administration (ROSA) and do not require video contact. The considerations and options for telepractice are different for the Interview Form and forms administered through ROSA. This document will guide you through remote administration of both OSA and ROSA administrations for the Vineland-3.

Conducting an assessment in a telepractice service delivery model requires an understanding of the interplay between a number of complex issues. In addition to the general information on our telepractice overview page, professionals should address five themes (Eichstadt et al., 2013) when planning for administering Vineland-3 via telepractice.

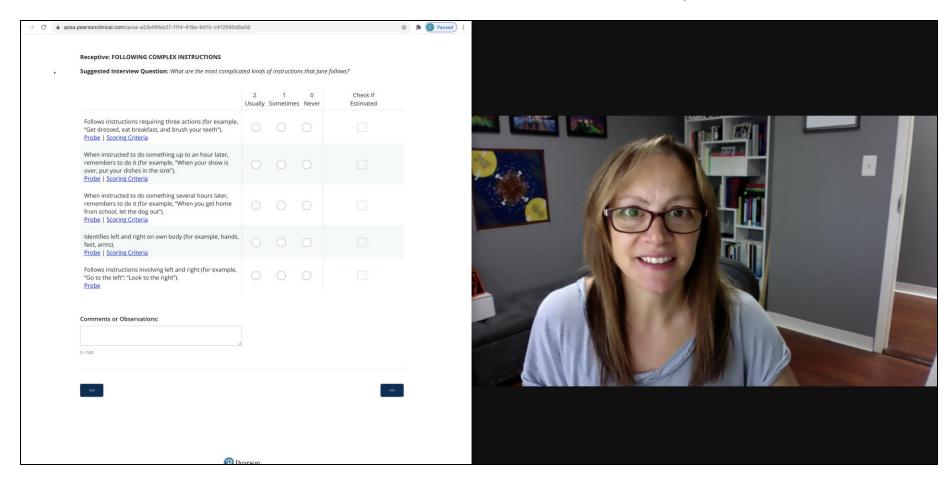


# Administering the Vineland-3 via Video Conference



#### Q Global

#### Zoom / Video Platform





## Summary



- It is standard practice to include adaptive behavior assessments as part of a diagnostic evaluation for ASD
- Adaptive behavior is strongly associated with optimal outcome into adulthood
- The Vineland-3 comprehensive interview offers a standardized way of collecting information that informs the diagnostic profile
- COVID-19 has forced us, as clinicians, to conduct evaluations remotely and in-person with PPE – although not the way our measures were standardized, we have to work with what we have!
- The Vineland-3 can be administered remoted via videoconference (or, less preferably, by phone)

# THANK YOU! Be Safe & Well!

celine@nacsatl.com

