Choosing the Right Tools: Smarter Psychological Testing in Child Assessments

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Disclosure

- My expenses for this talk are supported by Multi-Health Systems.
- I have developed tests marketed by Multi-Health Systems, Pro-Ed, Guinti Psychometrics and Western Psychological Services.
- I have authored books marketed by Springer, Wiley, Guilford, Double Day, McGraw Hill, Brookes, Kluwer and Specialty Press.
- I am past Editor in Chief of the Journal of Attention Disorders (Sage) and Co-Editor of the Encyclopedia of Child Development (Springer)

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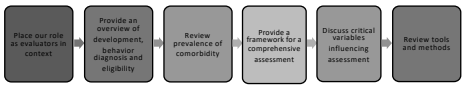
My Goals



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Objectives

Participants will be able to articulate a comprehensive framework for understanding children's emotional, behavioral, and developmental challenges.

Participants will learn to distinguish between broad and narrow-band psychological tests and identify their appropriate uses in child assessments.

Participants will gain the skills to select and apply psychological tests, which will provide a broad overview of a child's psychological profile.

Participants will be able to choose specific tests to explore in-depth conditions such as Autism, depression, anxiety, and learning disabilities.

Participants will enhance their decision-making abilities in psychological assessments, ensuring a balanced and practical approach to evaluating children's needs.

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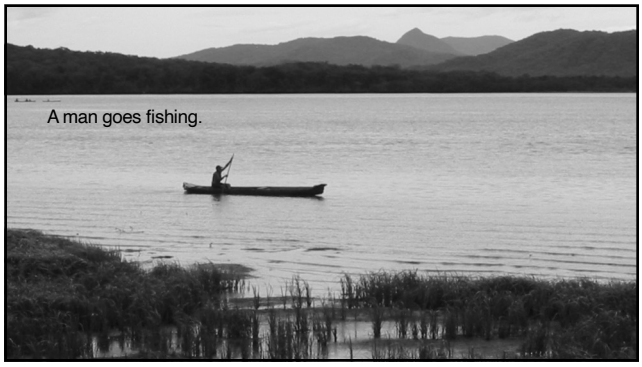

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6

The Bus Test

7

I Had a Revelation in St. Augustine

The world operates along a normal curve!

8

How I Was Trained

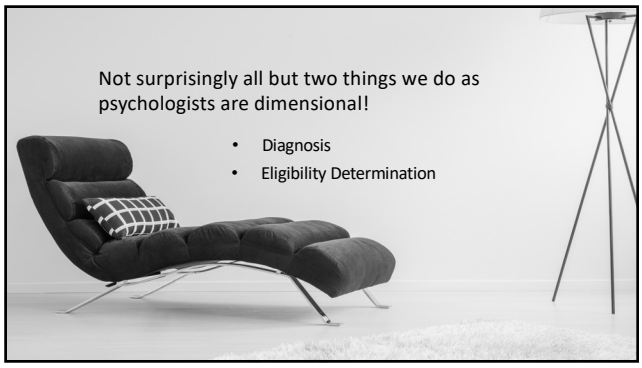
All Children:

With all children. Share qualities

Possess qualities unique to them

Share positive or negative qualities with sub-groups

9



10

Goldstein Developmental Continuum

- The Goldstein Developmental Continuum (GDC) was born out of my desire to provide a more flexible and nuanced understanding of children's behavior that moves beyond rigid diagnostic categories and legal frameworks.
- In my 40-plus years of experience working with children, I have observed that their behavior is rarely fixed or pathological; rather, it exists on a spectrum, influenced by developmental stages, environmental factors, and the challenges they face in their everyday lives.
- The continuum approach recognizes that behavior fluctuates and that early, context-sensitive interventions can help prevent more severe issues from developing.
- By focusing on developmental appropriateness and environmental influences, this model allows for a more holistic understanding of children's behavior, promoting early intervention and reducing the likelihood of mislabeling children with mental health disorders.
- My aim with the continuum is to help educators, clinicians, and parents move beyond binary labels of 'disruptive' or 'non-disruptive' and instead focus on creating environments that support positive behavior and emotional growth.

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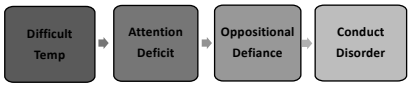
The Disruptive Continuum of Behavior



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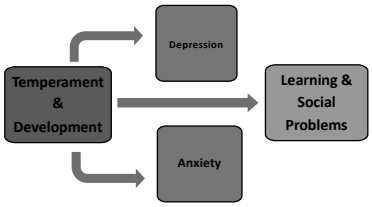
The Non-disruptive Continuum of Behavior



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Understand the ”Why" Before the ”What" of Psychological Testing

- Types of child assessments (cognitive, behavioral, developmental, neuropsychological)
- Referral questions: academic performance, behavioral issues, developmental delays, etc.
- Ethical considerations (e.g., consent, cultural sensitivity, test fatigue)
- Smarter assessment ≠ more tests; it means **purposeful** testing

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How Shall We Understand, Define and Categorize Mental Illness and Developmental Problems?

- By etiology or cause?
- By emotions, abilities, behaviors and thoughts?
- By impaired function in activities of life?

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Eligible

adjective

Having the right to do or obtain something; satisfying the appropriate conditions.

"Customers who are eligible for discounts"

Synonyms: entitled, permitted, allowed, qualified, able

"Those people eligible to vote"
(of a person) desirable or suitable as a partner in marriage.
"The world's most eligible bachelor"

Synonyms: desirable, suitable

Determining eligibility is an outcome best understood and obtained by a thorough assessment.

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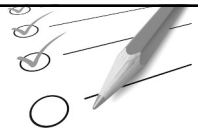
Diagnosis



Medicine/Medical.

The process of determining by examination the nature and circumstances of a diseased condition.

The decision reached from such an examination.

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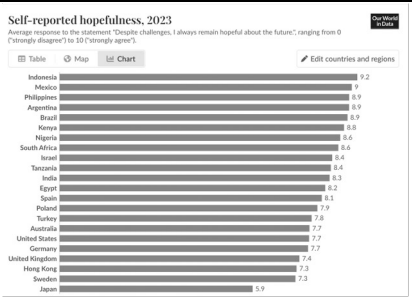

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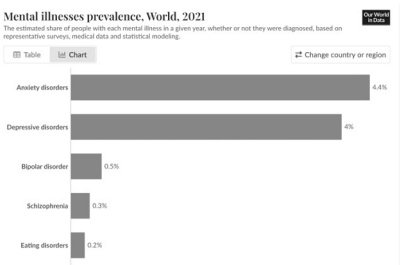
Mental illnesses prevalence, World, 2021
The estimated share of people with each mental illness in a given year, whether or not they were diagnosed, based on representative surveys, medical data and statistical modeling.
Our World in Data
Table
Chart
Change country or region
Anxiety disorders
4.4%
Depressive disorders
4%
Bipolar disorder
0.5%
Schizophrenia
0.3%
Eating disorders
0.2%

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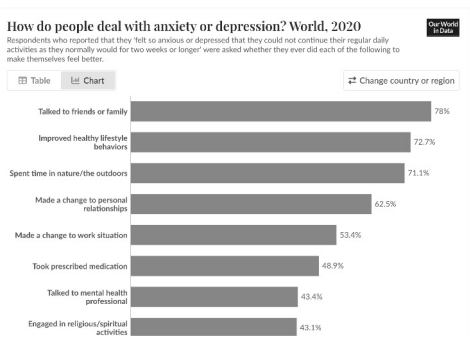
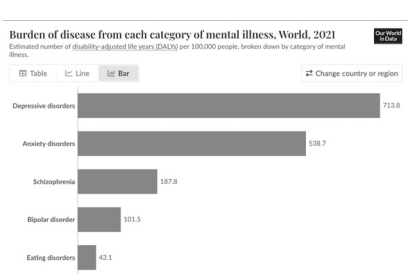
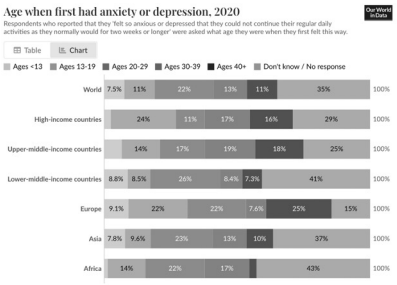

How do people deal with anxiety or depression? World, 2020
Respondents who reported that they 'felt so anxious or depressed that they could not continue their regular daily activities as they normally would for two weeks or longer' were asked whether they ever did each of the following to make themselves feel better.
Our World in Data
Table
Chart
Change country or region
Talked to friends or family
78%
Improved healthy lifestyle behaviors
72.7%
Spent time in nature/the outdoors
71.1%
Made a change to personal relationships
62.5%
Made a change to work situation
53.4%
Took prescribed medication
48.9%
Talked to mental health professional
43.4%
Engaged in religious/spiritual activities
43.1%

20


Burden of disease from each category of mental illness, World, 2021
Estimated number of disability-adjusted life years (DALYs) per 100,000 people, broken down by category of mental illness.
Our World in Data
Table
Line
Bar
Change country or region
Depressive disorders
713.8
Anxiety disorders
538.7
Schizophrenia
187.8
Bipolar disorder
101.5
Eating disorders
43.1

21



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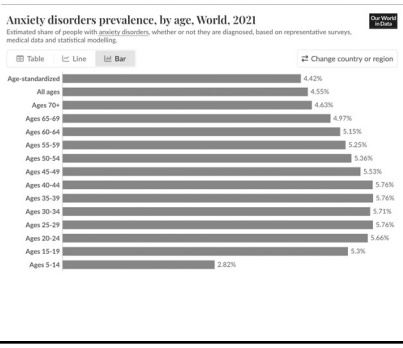

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How distinct are these disorders from each other?

Much less so than makes me comfortable!

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How distinct are these disorders from each other?

Although the National Institute of Mental Health (NIMH) has prepared well for this undertaking, much remains to be done. Rigorous diagnostic procedures are available for some mental disorders, but not all. Studies to identify the genes that influence the onset of mental disorders have been initiated, but too few are large enough to efficiently detect these genes. Dedicated investigators are working on various aspects of mental disorders, but more researchers with training in molecular and statistical genetics are required (NIH,1997)

NIH National Institute of Mental Health

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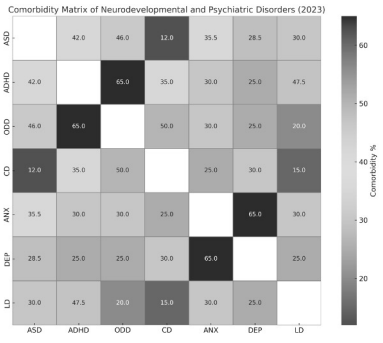
Co-Occurrence or Comorbidity



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Source Highlights

- **ASD + ADHD**: Comorbidity rates range from 42% to 81% depending on age and criteria used (Lecavalier et al., Gnanavel et al.)
- **ASD + Anxiety/Depression**: Anxiety disorders in ASD range from 29–42%; depression is slightly lower, around 20–37% (Van Steensel et al., Simonoff et al.)
- **ADHD + ODD/CD**: 60–70% for ODD, and 20–50% for CD (Gnanavel et al., Taurines et al.)
- **ADHD + LD**: Comorbidity with learning disorders remains high, around 45–50% (Khodeir et al.)
- **Anxiety + Depression**: Co-occurrence exceeds 60% in youth (Pehlivanidis et al.)
- **LD + Other Disorders**: LD commonly co-occurs with ADHD (45–50%) and ASD (20–40%) (Hendren et al.)

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Sources

Gnanavel, S., Sharma, P., Kaushal, P., & Hussain, S. (2019). Attention deficit hyperactivity disorder and comorbidity: A review of literature. *World Journal of Clinical Cases, 7*(17), 2420–2430. https://doi.org/10.12998/wjcc.v7.i17.2420

Van Steensel, F. J. A., Bögels, S. M., & de Bruin, E. I. (2012). Psychiatric comorbidity in children with autism spectrum disorders: A comparison with children with ADHD. *Journal of Child and Family Studies, 22*(3), 368–376. https://doi.org/10.1007/s10826-012-9587-z

Lecavalier, L., McCracken, C. E., & Aman, M. G. (2019). An exploration of concomitant psychiatric disorders in children with autism spectrum disorder. *Children and Youth Services Review, 100*, 1–9. https://doi.org/10.1016/j.childyouth.2018.10.001

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Journal List › Case Rep Psychiatry › v.2012; 2012 › PMC3477532

Case Reports in Psychiatry

Case Rep Psychiatry. 2012; 2012: 520689. PMCID: PMC3477532
Published online 2012 Oct 11. doi: 10.1155/2012/520689 PMID: 23097736

ADHD, ODD, and CD: Do They Belong to a Common Psychopathological Spectrum? A Case Series

Sayanti Ghosh and Mausumi Sinha*

• Author information • Article notes • Copyright and License information Disclaimer

Abstract Go to:

Purpose of Research. Numerous studies have reported comorbidities, overlapping symptoms, and shared risk factors among cases of attention deficit hyperactivity disorder (ADHD), oppositional defiant disorder (ODD) and conduct disorder (CD). We present three adolescent males aged 13–16 years with conduct disorder having past history of ADHD and ODD. *Principal Result.* The symptom profile especially in domains of aggression, hostility, and emotionality as well as the manner of progression from ADHD to ODD and CD in the above cases shows a similar pattern. *Conclusion.* These common developmental pathways and overlapping symptoms suggest the possibility of a common psychopathological spectrum encompassing the three externalizing disorders.

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J Autism Dev Disord. Author manuscript; available in PMC 2013 Sep 26. PMCID: PMC3784313
Published in final edited form as: NIHMSID: NIHMS511625
J Autism Dev Disord. 2008 Aug; 38(7): 1302–1310. PMID: 18188684
Published online 2008 Jan 11. doi: 10.1007/s10803-007-0516-8

Oppositional Defiant Disorder as a Clinical Phenotype in Children with Autism Spectrum Disorder

Kenneth D. Gadow,[2] Carla J. DeVincent, and Deborah A. G. Drabick

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Abstract Go to:

To examine the validity of oppositional defiant disorder (ODD) as a clinical phenotype distinct from attention-deficit hyperactivity disorder (ADHD), parents and teachers completed a DSM-IV-referenced rating scale and a background questionnaire for 608 children (ages 3–12 years) with autism spectrum disorder (ASD). The ASD sample was separated into four groups: ODD, ADHD, ODD + ADHD, and neither (NONE). Comparison samples were non-ASD clinic (n = 326) and community (n > 800) controls. In the ASD sample, all three ODD/ ADHD groups were clearly differentiated from the NONE group, and the ODD + ADHD group had the most severe co-occurring symptoms, medication use, and environmental disadvantage. There were few differences between ASD + ODD and ASD + ADHD groups. Findings for ASD and control samples were similar, supporting overlapping mechanisms in the pathogenesis of ODD.

Keywords: Oppositional defiant disorder, Autism spectrum disorder, Autism, Asperger's syndrome, PDDNOS, Pervasive developmental disorder, Attention-deficit/hyperactivity disorder, DSM-IV, Diagnosis

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J Affect Disord. 1996 Jul 8;39(2):123-6.

Comorbidity of major depression and conduct disorder.

Meller WH[1], Borchardt CM.

Author information

1 Department of Psychiatry, UMHC, Minneapolis, MN 55455, USA.

Abstract

The association of depression and conduct disorder is common and often perplexing in child psychiatry. Using a systematic retrospective chart review, various symptom, demographic and family history variables were compared between depression with comorbid conduct disorder and depression alone. Variables which differed between groups were entered into a stepwise discriminative function analysis. The four variables which discriminated between groups were anxiety, witness to family violence, illegal behavior, and impulsive behavior. The strongest discriminating variable, anxiety, was associated with depression without comorbid conduct disorder. These results emphasize the heterogeneity of childhood depression and potential importance of anxiety.

PMID: 8827421 DOI: 10.1016/0165-0327(96)00031-6

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Substance Use Disorders

Over 50% of youth with Substance Use Disorders suffer from at Least one psychiatric disorder

Santucci K. Psychiatric disease and drug abuse. *Curr Opin Pediatr*. 2012;24(2):233-237. doi:10.1097/MOP.0b013e3283504fbf.

Ross S, Peselow E. Co-occurring psychotic and addictive disorders: neurobiology and diagnosis. *Clin Neuropharmacol*. 2012;35(5):235-243. doi:10.1097/WNF.0b013e318261e193.

32

Int J Cogn Ther. Author manuscript; available in PMC 2014 Sep 5.
Published in final edited form as:
Int J Cogn Ther. 2013 Dec 1; 6(4): 325–341.
Published online 2014 Aug 26. doi: 10.1521/ijct.2013.6.4.325

PMCID: PMC4155521
NIHMSID: NIHMS591531
PMID: 25197427

The Influence of Comorbid Depression and Conduct Disorder on MET/CBT Treatment Outcome for Adolescent Substance Use Disorders

Jacqueline Hersh, MA,[a] John F. Curry, Ph.D.,[a,b] and Sara J. Becker, Ph.D.[c]

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Abstract Go to:

Although depression and conduct disorder frequently co-occur with substance use disorders (SUDs), few studies have investigated the individual and interactive effects of these conditions on SUD treatment outcome. Data were collected from 90 adolescents aged 13–21 ($M = 17.1$, $SD = 2.07$) who received a brief evidence-based intervention for SUD. Hierarchical regressions assessed the relationship among demographic variables, depression, conduct disorder, and two substance use outcomes (frequency and problems) at two intervals (three months, six months). Results revealed that higher baseline substance use and lower socioeconomic status significantly predicted higher substance problems and frequency at three-months. At six months, higher three month substance problems and lower depressive symptoms predicted substance problems. In addition, an interaction indicated that the effect of conduct disorder on substance problems was greatest at lower levels of depression. Results are discussed in the context of previous research indicating mixed effects of depression on SUD treatment outcome.

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How distinct are these disorders from each other?

For over a century, psychiatric disorders have been defined by expert opinion and clinical observation. The modern DSM has relied on a consensus of experts to define categorical syndromes based on clusters of symptoms and signs, and, to some extent, external validators, such as longitudinal course and response to treatment. In the absence of an established etiology, psychiatry has struggled to validate these descriptive syndromes, and to define the boundaries between disorders and between normal and pathologic variation.

Expert Review · Published: 09 January 2018

Psychiatric genetics and the structure of psychopathology

Jordan W. Smoller, Ole A. Andreassen, Howard J. Edenberg, Stephen V. Faraone, Stephen J. Glatt & Kenneth S. Kendler

Molecular Psychiatry (2018) · Download Citation

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How distinct are these disorders from each other?

Before the modern era of genomic research, family and twin studies demonstrated that all major psychiatric disorders aggregate in families and are heritable. Over the past decade, the success of large-scale genomic studies has confirmed several key principles: (1) psychiatric disorders are highly polygenic, reflecting the contribution of hundreds to thousands of common variants of small effect and rare (often de novo) SNVs and CNVs; (2) genetic influences on psychopathology commonly transcend the diagnostic boundaries of our clinical DSM nosology. At the level of genetic etiology, there are no sharp boundaries between diagnostic categories or between disorder and normal variation

Expert Review · Published: 09 January 2018

Psychiatric genetics and the structure of psychopathology

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Molecular Psychiatry (2018) · Download Citation

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Comorbidity is the

RULE

not the Exception

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What is the Goal of a Comprehensive Evaluation?

- Identify and define symptoms?
- Identify and define strengths and weaknesses?
- Appreciate the relationship of a set of symptoms to a unitary condition?
- Define limits of functional impairment to set a baseline for intervention?

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Components of a Thorough Assessment

- **History**
- **Broad Spectrum Questionnaires (Parent and Teacher)**
- **Impairment. Risk. Executive Functioning**
- **Narrow Spectrum Questionnaires (Parent and Teacher)**
- **Self report Questionnaires**
- **Ability Assessment**
- **Achievement Assessment**
- **Interview with student**

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Critical Issues In Assessment

- Demographics
- Symptoms vs. consequences
- Categories vs. dimensions
- Eligibility vs. diagnosis
- Developmental pathways: accept a moment in time
- There are no shortcuts
- Assess the environment

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Critical Issues in Assessment

- Assess for intervention
- Understand positive and negative predictive power
- Understand sensitivity vs. specificity
- Begin with the disruptive/non-disruptive continuum
- Keep low incidence problems in mind
- Consider resilience (protective) factors
- Measure impairment

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General Guidelines for a Comprehensive Evaluation

- A distinction should be made between acute vs. chronic problems.
- Person and environment protective factors need to be understood.
- Assessment should be strength and risk focused.
- Test results should be presented in ways that are useful to consumers (e.g. family, school, etc.).
- The least amount of assessment needed to answer referral questions should be completed.

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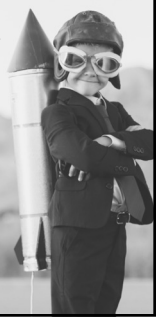
Person Attributes Associated With Successful Coping*

- Affectionate, engaging temperament.
- Sociable.
- Autonomous.
- Above average IQ.
- Good reading skills.
- High achievement motivation.
- Positive self-concept.
- Impulse control.
- Internal locus of control.
- Planning skills.
- Faith.
- Humorous.
- Helpfulness.



*Replicated in 2 or more studies.

42

Environmental Factors Associated With Successful Coping*

- Smaller family size.
- Maternal competence and mental health.
- Extended family involvement.
- Close bond with primary caregiver.
- Supportive siblings.
- Living above the poverty level.
- Friendships.
- Supportive teachers.
- Successful school experiences.
- Involvement in pro-social organizations.

*Replicated in 2 or more studies.

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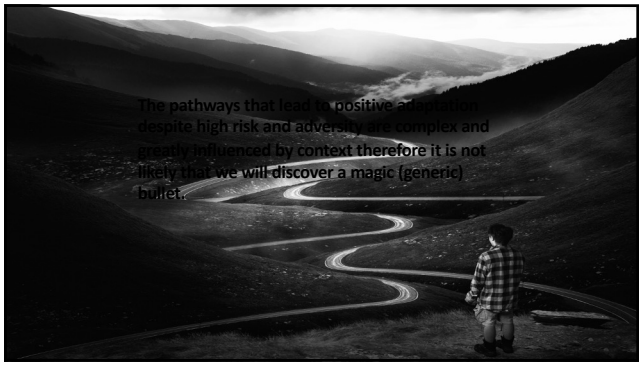

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How the Brain Works
Ability, Knowledge and Skill

45

Components of a Thorough Assessment

Step 1: History
Step 2: Assess Impairment (RSI), EF (CEFI) and Risk (RISE)
Step 3: Broad Spectrum: Conners CBRS or Conners EC
Step 4: Decide on Narrow Spectrum Questionnaires:
- Disruptive Problems: Conners 3
- Non-Disruptive:
  - ASRS
  - MASC 2
  - CDI 2
  - CAS Teacher Questionnaire

Step 5: Achievement & Ability Testing
Step 6: Resilience
Step 7: Personality

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Step 1: Obtain a Thorough History

- Immediate and extended family risks.
- Pregnancy and delivery
- Infancy and toddlerhood (temperament)
- Preschool and school history
- Socialization
- Family relations
- Sleep, appetite and hygiene
- Past treatments or educational services
- Discipline
- Situational problems

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Why is the assessment of impairment critical to a comprehensive evaluation??

49

An exhaustive review of the literature demonstrates that the relationship between symptoms and functioning remains unexpectedly weak and often bidirectional (McKnight and Kashdan, 2009).

50

Need

- There is a clear need to measure **"impairment"** when using the IDEIA, Diagnostic and Statistical Manual of the American Psychiatric Association (DSM) or the International Classification of Diseases (ICD) as a guide to eligibility determination and/or diagnosis.

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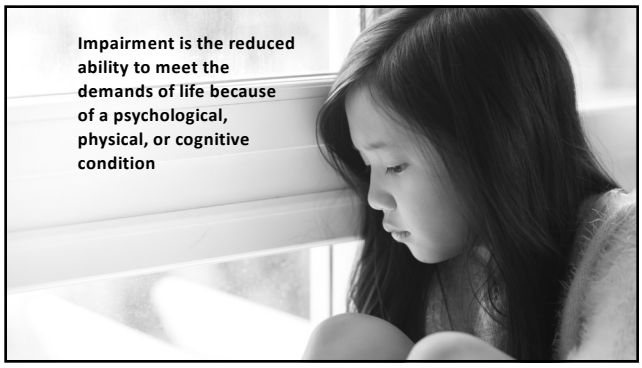

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Symptoms vs. Impairment

Impairment is not the same as symptoms

- Symptoms are physical, cognitive or behavioral **manifestations** of a disorder.
- Impairments are the functional **consequences of these symptoms.**

vs.

Inattention

Difficulty completing homework

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55

IMPAIRMENT VS. ADAPTIVE BEHAVIOR

A skill deficit occurs when a person does not know how to perform an everyday task, whereas a deficit in performance occurs when an individual has acquired a skill, yet does not seem to use it when needed.

(Ditterline & Oakland, 2009)

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IMPAIRMENT VS. ADAPTIVE BEHAVIOR

Thus, while measures of adaptive behavior emphasize the presence of adaptive skills in daily functioning, measures of functional impairment tend to emphasize the outcome of a behavior or the performance of an individual rather than the presence or absence of the skill.

Ditterline & Oakland (2009); Dumas et al. 2010); Gleason & Coster (2012)

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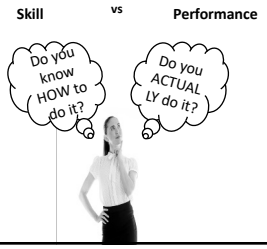
Adaptive Behavior vs. Impairment



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Adaptive Behavior vs. Impairment

Using utensils

Not using utensils to eat

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Symptoms vs. Impairment

Impairment can exist absent of formal diagnosis.
(Balazs et al., 2013; Wille et al., 2008)

In one study 14.2% of a sample of children were significantly impaired without a formal diagnosis.
(Angold et al., 1999)

60

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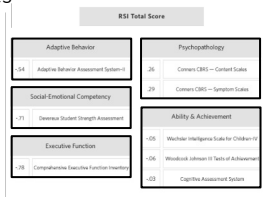
Relationship Between the RSI and Other Measures



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Executive Function

63

Executive Function(s)

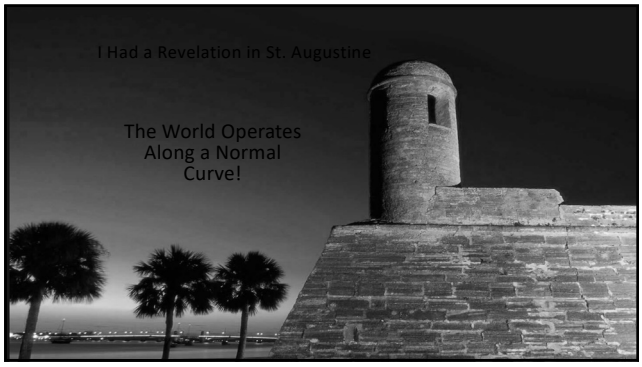
Given all these definitions of EF(s) we wanted to address the behavioral question…

Executive Function***s*** **…** or

Executive Function?

64

64



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Executive Function(s)

- One way to examine this issue is to research the factor structure of behaviors related to EF(s)
- To do so, we examined the factor structure of the Comprehensive Executive Function Inventory (CEFI)
- We conducted a series of research studies to answer the following question:
  - What is the underlying structure of the behaviors assessed on the CEFI?
  - Is there is just one underlying factor called executive function), or do the behaviors group together into different constructs suggesting a multidimensional structure?

66

66

Item Factor Analyses – Part 1

- For the *first half* of the normative sample for Parent, Teacher and Self ratings' **item scores** (90 items) was analyzed using exploratory factor analysis
- The *scree plots* and the *very simple solution* criterion both indicated that only **one factor**.
- The *ratio of the first and second eigenvalues* was greater than four for all three forms, which indicated a **one factor solution.**

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Item Factor Analyses – Part 1

Item level factor analysis clearly indicted that one factor was the best solution

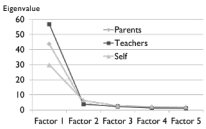

Table 8.2. Eigenvalues from the Inter-Item Correlations

	Factor						
Form	1	2	3	4	5	6	7
Parent	43.7	4.1	2.3	1.5	1.3	1.3	1.0
Teacher	56.8	3.8	2.3	1.3	1.1	1.1	0.8
Self-Report	29.9	6.3	2.7	2.1	1.9	1.8	1.5

Note. Extraction mipal Axis Factoring. Only the first 10 eigenvalues are presented.

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Scale Factor Analyses – Part 2

- Using the *second half* of the normative sample EFA was conducted using raw scores for the Attention, Emotion Regulation, Flexibility, Inhibitory Control, Initiation, Organization, Planning, Self-Monitoring, and Working Memory scales
- Both the Kaiser rule (eigenvalues > 1) *and* the Eigenvalue Ratio criterion (> 4) unequivocally indicated **one factor**.

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Item Factor Analyses – Part 2

Scale level factor analysis clearly indicted that one factor was the best solution

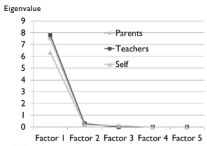

Table 8.4. Eigenvalues of the CEFI Scales Correlations

	Factor						
Form	1	2	3	4	5	6	7
Parent	7.5	0.2	0.0	0.0	0.0	0.0	0.0
Teacher	7.8	0.3	0.0	0.0	0.0	0.0	0.0
Self-Report	6.3	0.2	0.1	0.0	0.0	0.0	-0.1

Note. Extraction method: Prg.

70

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Exploratory Factor Analyses

Conclusion:

When using parent (N = 1,400), teacher (N = 1,400), or self-ratings (N = 700) based on behaviors observed and reported for a nationally representative sample (N = 3,500) aged 5 to 18 years Executive Function *not* functions is the best behavioral term to use.

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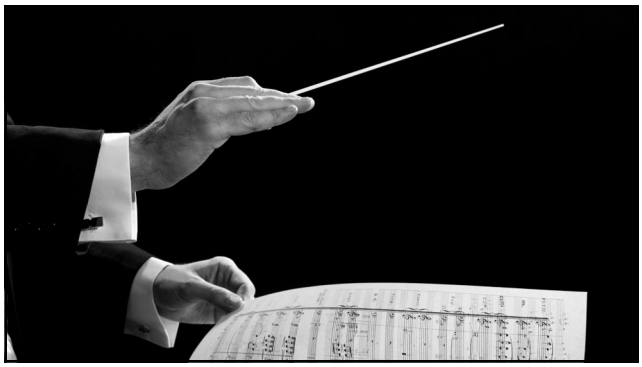

72

EF as a Mediator of Ability and Knowledge

- Ability: The skills we use to acquire and manipulate knowledge to solve problems. Also referred to as intelligence.
- Knowledge: Everything we learn in life. Also referred to as achievement.
- Executive Function: How efficiently or skillfully you do what you decide to do.

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Why Does Executive Function Matter?

EF is essential for success in daily living including:

Academic & occupational functioning
- For more information see: Best et al., 2009, Miller et al., 2012; Valiente et al., 2013

Interpersonal problems
- For more information see: Sprague et al., 2011; De Panfilis et al., 2013

Physical health
- For more information see: Hall et al., 2006, Falkowski et al., 2014

Mental health
- For more information see: Willcutt et al., 2005; Bora et al., 2009, Mesholam-Gately et al., 2009; Snyder, 2013

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Group Differences: ADHD

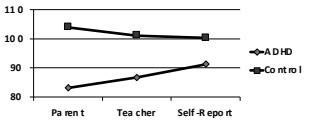

Table 8.19 Differences Between ADHD and Matched General Population Samples: CEFI Full Scale

Form		ADHD	Matched Gen. Pop.	d-ratio	F (df)	P
Parent	M	93.1	105.9	-1.59	216.56 (1, 346)	< .001
	SD	13.0	13.0			
	N	171	171			
Teacher	M	96.7	101.1	-1.07	79.93 (1, 278)	< .001
	SD	13.5	13.5			
	N	138	142			
Self-Report	M	91.2	100.3	-0.62	22.21 (1, 232)	< .001
	SD	14.7	14.7			
	N	117	117			

Note. ADHD = Attention-Deficit/Hyperactivity Disorder; Gen. Pop. = General Population.

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Group Differences: ASD

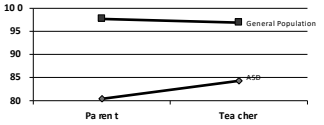

Table 8.20 Differences Between ASD and Matched General Population Samples: CEFI Full Scale

Form		ASD	Matched Gen. Pop.	d-ratio	F (df)	p
Parent	M	80.4	97.7	-1.41	48.96 (1, 96)	< .001
	SD	12.2	12.2			
	N	48	50			
Teacher	M	84.3	96.9	-0.99	23.11 (1, 92)	< .001
	SD	12.7	12.7			
	N	47	47			

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Group Differences: Learning Disabilities

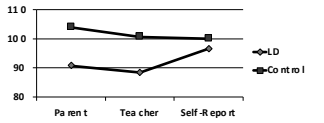

Table 8.22 Differences Between LD and Matched General Population Samples: CEFI Full Scale

Form		LD	Matched Gen. Pop.	d-ratio	F (df)	p
Parent	M	90.8	103.9	-0.92	19.89 (1, 93)	< .001
	SD	14.4	14.4			
	N	47	48			
Teacher	M	88.4	100.6	-0.91	37.29 (1, 178)	< .001
	SD	13.4	13.4			
	N	90	90			
Self-Report	M	96.6	100.0	-0.21	1.45 (1, 126)	0.231
	SD	15.9	15.9			
	N	64	64			

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Group Differences: Mood Disorders

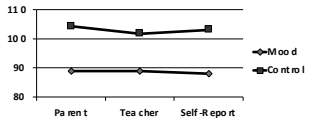

Table 8.21 Differences Between Mood Disorder and Matched General Population Samples: CEFI Full Scale

Form		Mood Disorder	Matched Gen. Pop.	d-ratio	F (df)	p
Parent	M	88.9	104.3	-1.11	22.66 (1, 71)	< .001
	SD	13.8	13.8			
	N	36	37			
Teacher	M	88.9	101.7	-1.01	14.9 (1, 57)	< .001
	SD	12.8	12.8			
	N	29	30			
Self-Report	M	88.0	103.1	-1.09	16.34 (1, 53)	< .001
	SD	13.9	13.9			
	N	27	28			

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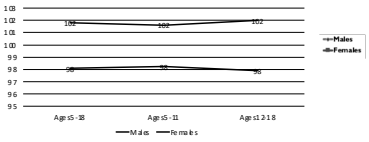
CEFI Gender Differences: Parent Raters

Girls are More Efficient Than Boys

Parents		Mn	SD	N	Mn	SD	ES
Ages 5-18	700	**98.1**	14.9	699	**101.8**	15.0	**-0.25**
Ages 5-11	350	**98.2**	14.3	349	**101.6**	15.6	**-0.22**
Ages 12-18	350	**97.9**	15.4	350	**102.0**	14.4	**-0.28**



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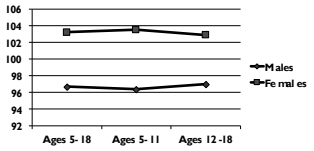
CEFI Gender Differences: Teacher Raters

Girls are More Efficient Than Boys

Teachers	N	Mn	SD	N	Mn	SD	ES
Ages 5-18	700	**96.7**	14.4	700	**103.2**	15.0	**-0.44**
Ages 5-11	350	**96.4**	14.5	350	**103.5**	14.9	**-0.49**
Ages 12-18	350	**97.0**	14.4	350	**102.9**	15.0	**-0.40**



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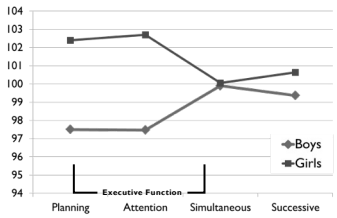
Gender Differences: Abilities Associated With EF



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CEFI Measurses Impact WISC-IV, CAS, and WJ III

- Data from the Neurology, Learning and Behavior Center in Salt Lake City, UT
- Children given the CEFI, WISC-IV (N = 43), CAS (N = 62), and the WJIII achievement (N = 58) as part of a typical test battery.

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CEFI and WISC IV

	WISC-IV						
	FS	VC	PR	WM	PS	CEFI	
CEFI						Mn	SD
Full Scale	.39	.44	.27	.30	.34	93.0	11.9
Attention	.39	.33	.32	.40	.35	91.8	11.2
Emotion Regulation	.14	.25	.08	-.06	.11	97.2	14.7
Flexibility	.57	.68	.45	.46	.37	93.8	11.0
Inhibitory Control	.21	.20	.13	.08	.27	97.7	13.5
Initiation	.25	.31	.14	.21	.25	91.2	15.1
Organization	.15	.17	.06	.14	.17	92.2	13.6
Planning	.46	.54	.31	.38	.39	93.6	11.1
Self-Monitoring	.39	.45	.31	.33	.27	92.0	11.3
Working Memory	.38	.43	.31	.36	.23	92.5	13.6
WISC-IV M	95.5	96.8	101.5	92.6	90.7	92.6	
WISC-IV SD	18.1	14.7	17.5	17.5	19.4	17.5	

Note: All correlations were corrected for range instability.

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CEFI and CAS

	CAS					CEFI	
	FS	Plan	Sim	Att	Suc		
CEFI						Mn	SD
Full Scale	.45	.49	.43	.37	.32	91.4	13.2
Attention	.40	.42	.39	.30	.35	90.3	12.8
Emotion Regulation	.26	.22	.23	.24	.13	96.9	14.7
Flexibility	.52	.54	.51	.40	.42	92.2	13.0
Inhibitory Control	.27	.29	.22	.18	.21	96.0	13.9
Initiation	.40	.37	.31	.30	.20	89.0	16.3
Organization	.29	.36	.21	.20	.23	90.5	14.3
Planning	.47	.54	.46	.37	.38	92.5	12.4
Self-Monitoring	.48	.50	.49	.43	.35	91.2	12.4
Working Memory	.48	.46	.45	.38	.30	91.0	14.0
CAS Mn	95.8	92.4	101.6	96.5	98.0		
CAS SD	17.1	14.5	17.0	15.1	14.6		

Note: All correlations were corrected for range instability.

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CEFI and Woodcock III

	WJ-III Achievement Tests				
CEFI Scales	Total	Broad Reading	Broad Math	Broad Written Language	Median
Full Scale	.51	.48	.49	.47	.49
Attention	.59	.52	.46	.55	.54
Emotion Regulation	.18	.27	.15	.17	.18
Flexibility	.61	.50	.55	.54	.55
Inhibitory Control	.23	.32	.15	.26	.25
Initiation	.32	.26	.38	.28	.30
Organization	.32	.31	.33	.33	.33
Planning	.58	.54	.57	.50	.56
Self-Monitoring	.53	.51	.51	.49	.51
Working Memory	.57	.48	.60	.47	.53
	p < .05	p < .01			

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Comprehensive Executive Function Inventory (CEFI)

- A comprehensive behavior rating scale of executive function strengths and weaknesses in children and youth aged 5 to 18 years.
- Executive function is important for problem solving and reasoning, and difficulties with executive function can often make simple tasks challenging.

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Assessment of Risks and Strengths
Risk Inventory and Strengths Evaluation (RISE)

- Protective Behaviors
  - -Emotional Balance
  - -Interpersonal Skill
  - -Self Confidence
- Risky Behaviors
  - Bullying
  - Delinquency
  - Health
  - Sexual
  - Substance Abuse
  - Suicide

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RISE Overview

- The first tool to look at these concepts within the context of each other
- Ages 9 through 25 years; Parent, Teacher and Self Forms
- 15-20 minutes administration time
- Norm-referenced *T*-scores examine broad constructs of risk and strength
- Response validity scores also available
- For educational psychologists, counselors, clinical psychologists and other mental-health professionals working with children, adolescents and young adults (Level C)

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Standardization: RISE Normative and Clinical Samples

- Nationally representative (U.S.) normative sample: Matched to U.S. Census on gender, race/ethnicity, SES and U.S. geographic region
  - Parent: 1,005 forms
  - Self: 1,380 forms
  - Teacher: 1,000 forms
- Clinical validity sample:
  - 185 Parent Forms
  - 270 Self Forms
  - 152 Teacher Forms
- Includes multiple sub-samples based on risk factors, diagnosis, etc.
  - At Risk
  - Gang Membership
  - Suicidality/Depression
  - ADHD
  - ASD

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Reliability

Internal consistency coefficients ≥.90 for Summary scales and RISE Index; ≥.70 for Subscales

RISE Parent Form Internal Consistency Estimates, Standardization Sample

	Parent Form (n = TBD)	Self Form (n = TBD)	Teacher Form (n = 1000)
Risk Summary Scale	0.95	0.92	0.90
Strength Summary Scale	0.95	0.93	0.95
RISE Index	0.97	0.94	0.95
Risk Subscales			
Bullying/Aggression	0.86	0.83	n/a
Delinquency	0.84	0.78	n/a
Eating/Sleeping Problems	0.85	0.82	n/a
Sexual Risk	0.82	0.70	n/a
Substance Abuse	0.88	0.78	n/a
Suicide/Self-Harm	0.91	0.91	n/a
Strength Subscales			
Emotional Balance	0.89	0.83	0.89
Interpersonal Skill	0.87	0.83	0.89
Self-Confidence	0.83	0.78	0.86

In statistics and research, internal consistency is typically a measure based on the correlations between different items on the same test. It measures whether several items that propose to measure the same general construct produce similar scores.

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Concurrent Validity

Highlights of correlational studies with concurrent measures

2 factors (risk and strengths), so measures chosen to evaluate both

Risk Scale

BASC-3 *Externalizing Problems* with RISE *Risk Summary:* Parent: *r* = .69; Teacher: *r* = .63 ; Self: *r* = .67 with BASC-3 *School Problems*

Conners CBRS *Violence Potential* with RISE *Risk Summary:* Parent: *r* = .66; Self: *r* = .66; Teacher: *r* = .74

Concurrent validity refers to the extent to which the results of a particular test or measurement correspond to those of a previously established measurement for the same construct.

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Concurrent Validity

Highlights of correlational studies with concurrent measures

2 factors (risk and strengths), so measures chosen to evaluate both

Strength Scale

ABAS-3 *General Adaptive Composite* with RISE *Strength Summary:* Parent: *r* = .75; Self: *r* = .58; Teacher: *r* = .57

Piers-Harris 3 *Total score with* RISE *Strength Summary:* Self: *r* = .47

Analysis of subscales (comprehensive studies in Chapter 5 of RISE Manual) demonstrates extensive evidence of concurrent validity AND shows that while these measures are complementary, the RISE provides data that other scales do not.

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Validity: Clinical Groups

At-Risk Sample (*n* = 160): Key validation sample for RISE: qualifying for prevention and intervention services because of unfavorable socioeconomic circumstances, current gang members, ex-gang members, and youth on probation

RISE scores differentiate at-risk youth from typically developing youth with ***large, clinically significant effect sizes.***

Validity studies also cover a range of additional groups (clinician-assigned diagnosis):

- Gang Membership
- Suicidality/Depression
- ADHD
- ASD
- Eating Disorders
- Substance Abuse

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Step 3: Broad Spectrum Measure

Conners Early Childhood (Conners EC)
2 to 6 years

Conners Comprehensive Behaviour Rating Scales (Conners CBRS)
6 to 18 years

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Conners EC

- Innovative psychological instrument to assess the concerns of parents, teachers, and childcare providers about preschool-aged children.
- Aids in the early identification of behavioral, social, and emotional problems.
- Assists in measuring whether or not a child is appropriately meeting major developmental milestones (Adaptive Skills, Communication, Motor Skills, Play, and Pre-Academic/Cognitive).

C. Keith Conners, PhD

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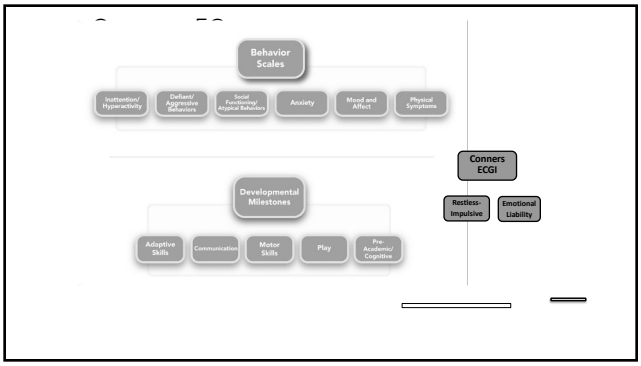

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Conners CBRS

- Comprehensive assessment tool for behavioral, emotional, social, and academic concerns and disorders.
- Common and rare but critical issues.

C. Keith Conners, PhD

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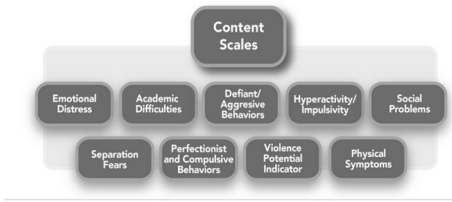
Conners CBRS



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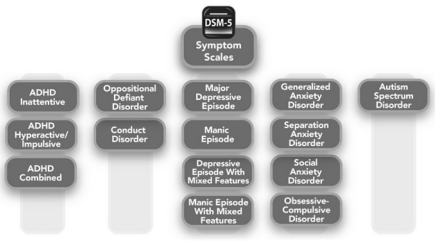
Conners CBRS



100

Other Clinical Indicators

- Bullying Perpetration
- Bullying Victimization
- Enuresis/Encopresis[1]
- Panic Attack
- Pervasive Developmental Disorder[3]
- Pica[2]
- Post-Traumatic Stress Disorder
- Specific Phobia
- Tics
- Trichotillomania

1 Scale Conners CBRS-P & CBRS-T forms only; 2 Scales on Conners CBRS-P & CBRS-SR forms only; 3 Scales on Conners CBRS-SR form only.

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Step 4: Decide on Narrow Spectrum Questionnaires

Disruptive Problems:
- **Conners 3**

Non-Disruptive:
- **ASRS**
- **MASC 2**
- **CDI 2**
- **CAS Teacher Questionnaire**

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Conners 3rd Edition (Conners 3)

C. Keith Conners, Ph.D.

A thorough and focused assessment of ADHD and its most common co-morbid problems and disorders in children and adolescents ages 6 to 18 years.

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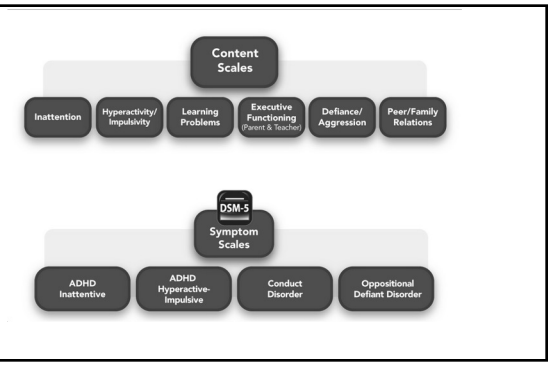

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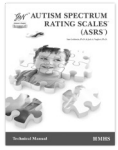
Autism Spectrum Rating Scales

Multi-informant measure designed to identify symptoms, behaviors, and associated features of Autism Spectrum Disorder (ASD) in children and adolescents aged 2 to 18 years.



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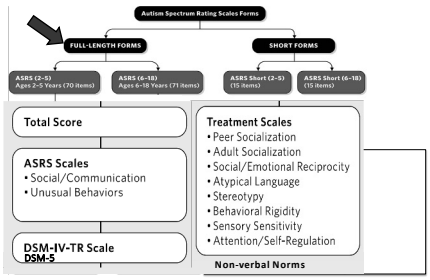

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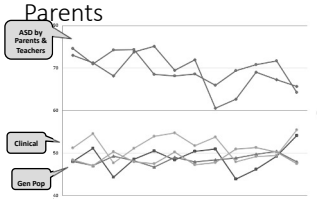
ASRS Validity for ages 2-5 Parents



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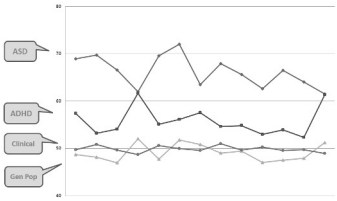
ASRS Validity: Ages 6-18 Parents



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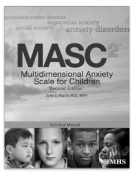
Multidimensional Anxiety Scale for Children 2nd Edition (MASC 2)

- Comprehensive multi-rater assessment of anxiety dimensions in children and adolescents aged 8 to 19 years.
- Distinguishes between important anxiety symptoms and dimensions that broadband measures do not capture.



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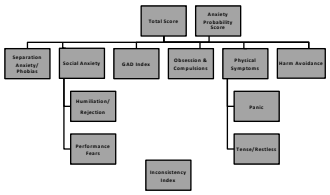
MASC 2 Scales



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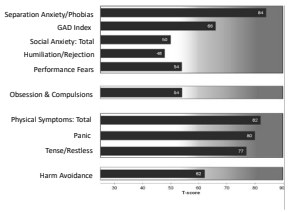
MASC 2 Scales



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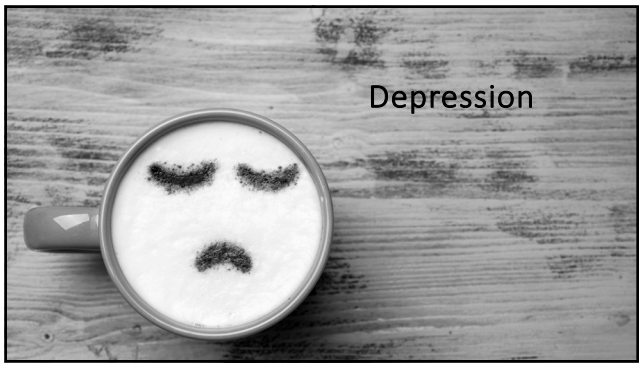


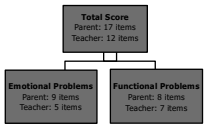
115

Children's Depression Inventory 2™ (CDI 2)

Comprehensive multi-rater assessment of depressive symptoms in children and adolescents from ages 7 to 17, which offers the flexibility of application in either clinical or educational settings.

116

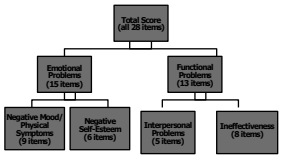
Scale Structure: Parent and Teacher



4-point Likert-type rating: 0="Not at All" ; 3="Much or Most of the Time"

117

Scale Structure: Self-Report (Full Length)



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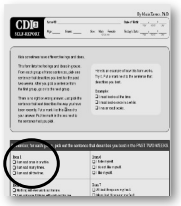

CDI-2 Self-Report

Each sentence is given either 0,1, or 2 points

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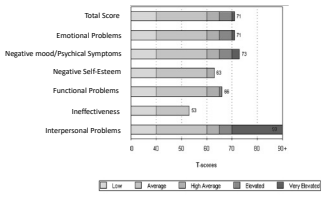
CDI 2 Profile



120

Cognitive/Neuropsychological Abilities

CAS2 (Ages 5-18 yrs.)

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PASS Theory

PASS theory is a modern way to define 'ability' based on measuring neurocognitive abilities

Planning = THINKING ABOUT THINKING
Attention = BEING ALERT
Simultaneous = GETTING THE BIG PICTURE
Successive = FOLLOWING A SEQUENCE

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CAS2 Development Goals

- New norms
- Strengthen reliability of the scales by modifying subtest formats
- Improve factor structure
- Add/delete items
- Add a visual Successive subtest
- Add new scales beyond PASS
- Retain Administration format of
  - Examiner demonstrates,
  - Child does a sample
  - Directions for remaining items is given
  - And opportunity to Provide Help is given

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Census Matched

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Empirically Derived

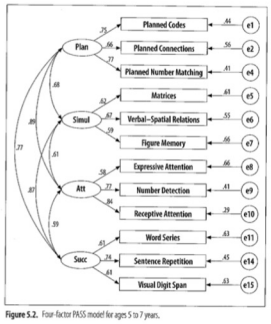

Figure 5.2. Four-factor PASS model for ages 5 to 7 years.

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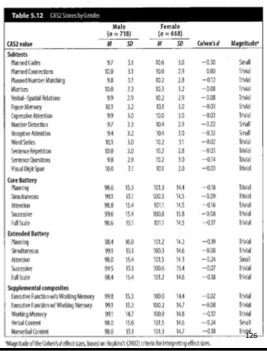
Gender and Race Fair



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Carefully Developed

Relationship Between Strategy Use and Standard Scores

The relationship between reported and observed strategy use and standard scores earned by the students in the standardization sample is summarized for each of the Planning subtests in Table 5.10. The mean subtest scaled score was computed for those students who used and who did not use strategies on each subtest. With the exception of the Planned Connections subtest, results show that the mean scaled scores for those who used strategies were slightly higher than the mean scaled scores obtained by those who did not use strategies. The differences between the two groups suggest that strategy use was associated with modest improvements in Planning scores.

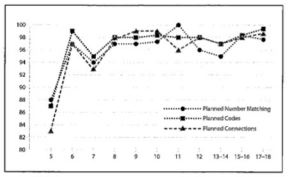

Figure 5.1. Percentage of the standardization sample, by age, who used strategies on the Planning subtests.

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CAS2

- Flexibility with special populations
- Strategy assessment
- Guidelines for providing help.

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Provide Help

The examiner can explain the demands of the task in any manner deemed appropriate and in any language

Item Set 1

Expose Item Set 1 and say,

Look at this page. There are many boxes for you to fill in (point to the portion of the page with the empty boxes, but do not point in a sweeping motion to the rows or columns). **Fill in as many of these as you can, as fast as you can, using these answers** (point to the coded boxes, and pause for 3-5 seconds to allow the examinee to look at the page). **You can do it any way you want. Let's see how many you can do.**

Ready? (Provide a brief explanation if necessary.)

Begin. Start timing. Allow 60 seconds (100 minute). Record the time to completion and strategy use.

If the examinee stops or spends more than 1 or 2 seconds erasing, immediately say, **Keep going.**

If the examinee is still working after the time limit expires, say, **Stop.** Record the time in seconds. Note strategy use.

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CAS2

- Same 8 (40 minutes) or 12 (60 minutes) subtest versions
- PASS and Full Scales provided (100 & 15) subtests (10 and 3)

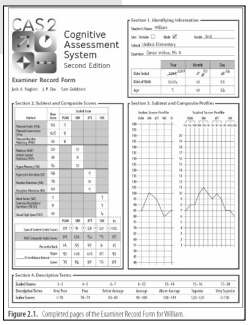
CAS2 Cognitive Assessment System Second Edition
Examiner Record Form

Figure 2.1. Completed pages of the Examiner Record Form for William.

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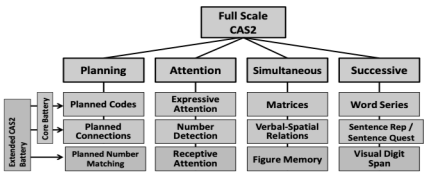
CAS2 Scale and Subtest Structure



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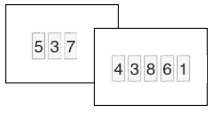
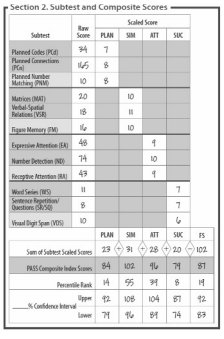
CAS2

- All subtests modified
- Planning subtests have more items
- Speech Rate deleted
- New: Visual Digit Span subtest




Section 2. Subtest and Composite Scores

Subtest	Raw Score	Scaled Score PLAN	SIM	ATT	SUC
Planned Codes (PCd)	34	7			
Planned Connections (PCn)	165	8			
Planned Number Matching (PNM)	10	8			
Matrices (MAT)	20		10		
Verbal-Spatial Relations (VSR)	18		11		
Figure Memory (FM)	16		10		
Expressive Attention (EA)	48			9	
Number Detection (ND)	74			10	
Receptive Attention (RA)	43			9	
Word Series (WS)	11				7
Sentence Repetition/ Questions (SR/SQ)	8				7
Visual Digit Span (VDS)	10				6

	PLAN	SIM	ATT	SUC	FS
Sum of Subtest Scaled Scores	23	31	28	20	102
PASS Composite Index Scores	84	102	94	79	87
Percentile Rank	14	55	34	8	19
95% Confidence Interval Upper	92	106	104	87	92
95% Confidence Interval Lower	79	94	87	74	83

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CAS2

- Supplementary Scales: Executive Function, Working Memory, Verbal, Nonverbal
- Added: A Visual and Auditory comparison

Visual–Auditory Comparison

	Scaled Score
Word Series	_____
Visual Digit Span	_____
Difference (ignore sign)	_____
Circle one: .05 .10 NS	

Supplemental Composite Scores

Subtest	Scaled Score				
	EF w/o WM	EF w/ WM	WM	VC	NvC
Planned Codes					7
Planned Connections	8	8			
Matrices					10
Verbal-Spatial Relations		11	11	11	
Figure Memory					10
Expressive Attention	9	9			
Receptive Attention				9	
Sentence Repetition/Questions		7	7	7	
	EF w/o WM	EF w/ WM	WM	VC	NvC
Sum of Subtest Scaled Scores	17	35	18	27	27
Composite Index Scores	91	91	94	93	92
Percentile Rank	27	27	34	32	30
____% Confidence Interval Upper	101	99	101	101	99
____% Confidence Interval Lower	84	85	88	87	86

Note: EF w/o WM = Executive Function without Working Memory; EF w/WM = Executive Function with Working Memory; WM = Working Memory; VC = Verbal Content; NvC = Nonverbal Content.

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CAS2 Online Score & Report

http://www.proedinc.com/customer/ProductView.aspx?ID=7277

- Enter data at the subtest level or enter subtest raw scores
- Online program converts raw scores to standard scores, percentiles, etc. for all scales.
- A narrative report with graphs and scores is provided

CAS2: Online Scoring and Report System (1-Year Base Subscription) (14311)
This product requires a check of customer qualifications. Click here to download qualifications form. TO ORDER, CALL: 800-897-3202.

Price: $199.00

NEW

NOW AVAILABLE!

Ages: 5 through 18 years
Testing Time: 40 to 60 minutes
Administration: Individual

The new PC, Mac™, and iPad™ compatible *CAS2 Online Scoring and Report System* program is an efficient and easy way to obtain CAS2 scores and corresponding narrative.

Use *CAS2 Online Scoring and Report System* for:

- converting CAS2 subtest raw scores into standard scores, percentile ranks, descriptive terms, and age equivalents;
- generating PASS and Full Scale composite scores;
- comparing CAS2 subtest and PASS scale scores to identify significant intra-individual differences;
- providing a pdf report of CAS2 performance; and
  - Sample Interpretive Report
  - Sample Score Summary
- providing intervention options.

Ordering options:

- *CAS2 Online Scoring and Report System* first-time base subscription provides one-year unlimited online scoring and report access for up to 5 users.
- Annual base subscription renewal provides one-year unlimited online scoring and report access for up to 5 users.

ORDERING OPTIONS:

- CAS2: Online Scoring and Report System (Add on 5-User License) **$69.00**
- CAS2: Online Scoring and Report System (Annual Renewal) **$69.00**

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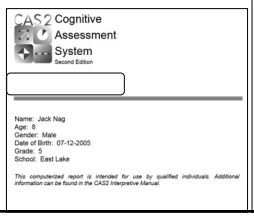
CAS2 Online Score & Report

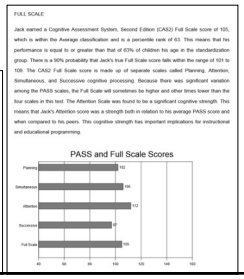
- Narrative report can be obtained in Word or PDF



CAS2 Cognitive Assessment System Second Edition

Name: Jack Nag
Age: 8
Gender: Male
Date of Birth: 07-12-2005
Grade: 5
School: East Lake

This computerized report is intended for use by qualified individuals. Additional information can be found in the CAS2 Interpretive Manual.



FULL SCALE

Jack earned a Cognitive Assessment System, Second Edition (CAS2) Full Scale score of 105, which is within the Average classification and is a percentile rank of 63. This means that his performance is equal to or greater than that of 63% of children his age in the standardization group. There is a 90% probability that Jack's true Full Scale score falls within the range of 101 to 109. The CAS2 Full Scale score is made up of separate scales called Planning, Attention, Simultaneous, and Successive cognitive processing. Because there was significant variation among the PASS scales, the Full Scale will sometimes be higher and other times lower than the four scales in this test. The Attention Scale was found to be a significant cognitive strength. This means that Jack's Attention score was a strength both in relation to his average PASS score and when compared to his peers. This cognitive strength has important implications for instructional and educational programming.

PASS and Full Scale Scores

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CAS2 Subtests

Planning

- Planned Codes
- Planned Connections
- Planned Number Matching

Attention

- Expressive Attention
- Number Detection
- Receptive Attention

Simultaneous

- Matrices
- Visual Spatial Relations
- Figure Memory

Sequencing

- Word Series
- Sentence Repetition/Questions
- Visual Digit Span

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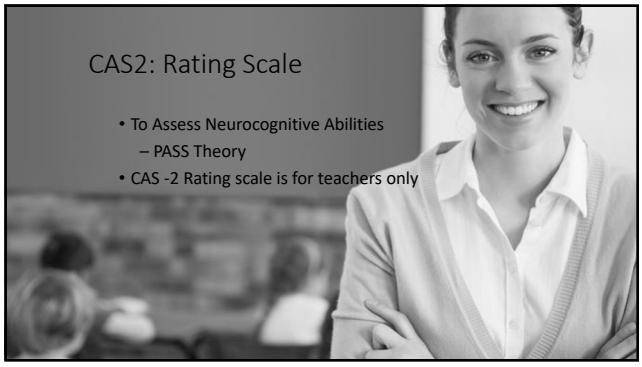
CAS2: Rating Scale



- To Assess Neurocognitive Abilities
  - PASS Theory
- CAS -2 Rating scale is for teachers only

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Cognitive Assessment System: Rating Scale (CAS2: Rating Scale)

- Norm referenced measure of behaviors related to cognitive / neuropsychological theory called **PASS** (**P**lanning, **A**ttention, **S**imultaneous, and **S**uccessive).
- The scores from the *CAS2: Rating Scale* can be used to:
  - Support a referral, supportive services, or special placements.
  - Supplement a comprehensive evaluation.
  - Compare teachers' ratings with test results.
  - Help plan and design academic interventions.
  - Monitor the effectiveness of interventions.

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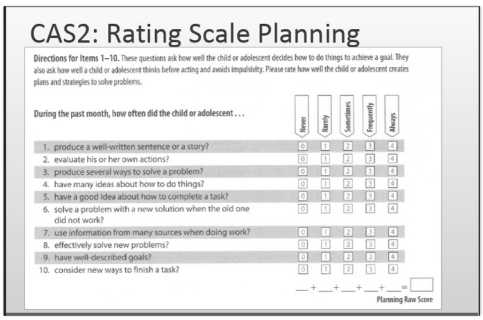
CAS2: Rating Scale Planning



Directions for Items 1–10. These questions ask how well the child or adolescent decides how to do things to achieve a goal. They also ask how well a child or adolescent thinks before acting and avoids impulsivity. Please rate how well the child or adolescent creates plans and strategies to solve problems.

During the past month, how often did the child or adolescent . . .

	Never	Rarely	Sometimes	Frequently	Always
1. produce a well-written sentence or a story?	0	1	2	3	4
2. evaluate his or her own actions?	0	1	2	3	4
3. produce several ways to solve a problem?	0	1	2	3	4
4. have many ideas about how to do things?	0	1	2	3	4
5. have a good idea about how to complete a task?	0	1	2	3	4
6. solve a problem with a new solution when the old one did not work?	0	1	2	3	4
7. use information from many sources when doing work?	0	1	2	3	4
8. effectively solve new problems?	0	1	2	3	4
9. have well-described goals?	0	1	2	3	4
10. consider new ways to finish a task?	0	1	2	3	4

___ + ___ + ___ + ___ + ___ = ___

Planning Raw Score

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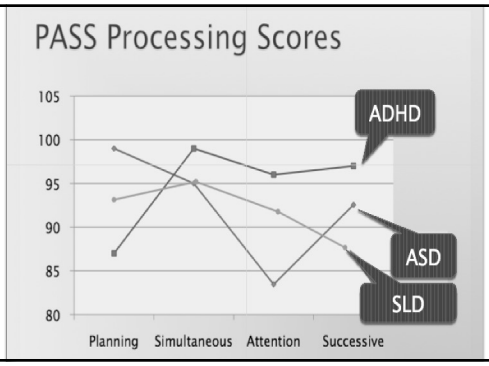
PASS Processing Scores



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Organizing the Data

- A day in the life
- Ability/Knowledge/Skill
- Take a chronological perspective.
- Risk and Protective factors
- Determining eligibility
- Suggesting possible diagnoses
- Recommending needs
- Considering continuum of services

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Multiple Handicap or Primary/Secondary?

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ADOPT A LEARNING TO RIDE A BICYCLE MINDSET!

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Thank You!

Sam Goldstein, Ph.D.

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@drsamgoldstein
@doctorsamgoldstein

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