ASSESSMENT OF STUDENTS WITH CO-MORBID DISORDERS AND MULTIPLE ELIGIBILITIES UNDER IDEIA/ADA (1.0)

Sam Goldstein, Ph.D.
Assistant Clinical Professor
University of Utah School of Medicine
Clinical Director
Neurology, Learning and Behavior Center

Disclosure

- My expenses for this talk are supported by Multi-Health Systems.
- I have developed tests marketed by Multi-Health Systems, Pro-Ed and Western Psychological Services.
- I am Editor in Chief of the Journal of Attention Disorders (Sage) and Co-Editor of the Encyclopedia of Child Development (Springer)

Learning Objectives

- Place our role as evaluators in context
- Provide an overview of development, diagnosis and eligibility
- Review prevalence of comorbidity
- Provide a framework for comprehensive assessment
- Discuss criteria validation and significance
- Review tools and methods
The Bus Test

I Had a Revelation in St. Augustine

The world operates along a normal curve!

Not surprisingly all but two things we do as psychologists are dimensional!

- Diagnosis
- Eligibility Determination
The Disruptive Continuum of Behavior

- Difficult Temp
- Attention Deficit
- Oppositional Defiance
- Conduct Disorder

The Non-disruptive Continuum of Behavior

- Temperament & Development
- Depression
- Learning & Social Problems
- Anxiety

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?
Diagnosis

*Medicine/Medical.*

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

The decision reached from such an examination.

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, ok’d

"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.
How distinct are these disorders from each other?

Much less so than makes me comfortable!

Co-Occurrence/Comorbidity

<table>
<thead>
<tr>
<th>Dx</th>
<th>ASD</th>
<th>ODD</th>
<th>CD</th>
<th>Anx</th>
<th>Dep</th>
<th>LD</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADHD</td>
<td>59%</td>
<td>47%</td>
<td>22%</td>
<td>35%</td>
<td>41%</td>
<td>45%</td>
</tr>
<tr>
<td>ASD</td>
<td>4% to 37%</td>
<td>1% to 10%</td>
<td>42%</td>
<td>1.4% to 38%</td>
<td>70%+</td>
<td></td>
</tr>
<tr>
<td>ODD</td>
<td>42%</td>
<td>62%</td>
<td>39%</td>
<td>55%+</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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).
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.

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.

Comorbidity is the RULE not the Exception
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?

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

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.
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.

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.

The pathways that lead to positive adaptation, despite high risk and adversity are complex and greatly influenced by context therefore it is not likely that we will discover a magic (generic) bullet.
Special Education Legislative History

• 1975 — The Education for All Handicapped Children Act (EAHCA) became law. It was renamed the Individuals with Disabilities Education Act (IDEA) in 1990.


• 1997 — IDEA received significant amendments. The definition of disabled children expanded to include developmentally delayed children between three and nine years of age. It also required parents to attempt to resolve disputes with schools and Local Educational Agencies (LEAs) through mediation, and provided a process for doing so. The amendments authorized additional grants for technology, disabled infants and toddlers, parent training, and professional development. (Pub. L. No. 105-17, 111 Stat. 37).

• 2004 — On December 3, 2004, IDEA was amended by the Individuals With Disabilities Education Improvement Act of 2004, now known as IDEIA. Several provisions aligned IDEA with the No Child Left Behind Act of 2001, signed by President George W. Bush. It authorized fifteen states to implement 3-year IEPs on a trial basis when parents continually agree. Drawing on the report of the President’s Commission on Excellence in Special Education,[46] the law revised the requirements for evaluating children with learning disabilities. More concrete provisions relating to discipline of special education students was also added. (Pub. L. No. 108-446, 118 Stat. 2647).

• 2009 — Following a campaign promise for “funding the Individuals with Disabilities Education Act”,[47] President Barack Obama signed the American Recovery and Reinvestment Act of 2009 (ARRA) on February 17, 2009, including $12.2 billion in additional funds.

• 2009 — Americans with Disabilities Amendments Act was signed into law in September 2008 and became effective on January 1, 2009

IDEA

Children are placed in special education services through an evaluation process. If the evaluation is not appropriately conducted, or does not monitor the information that is needed to determine placement it is not appropriate.

The goal of IDEA’s regulations for evaluation is to help minimize the number of misidentifications, to provide a variety of assessment tools and strategies, to prohibit the use of any single evaluation as the sole criterion of which a student is placed in special education services, and to provide protections against evaluation measures that are racially or culturally discriminatory.

Overall, the goal of appropriate evaluation is to get students who need help, extra help that is appropriate for the student and helps that specific student to reach his or her goals set by the IEP team.
California

§ 3003. Eligibility Criteria.
5 C.A.C. § 3003.1(RCLAY'S OFFICIAL CALIFORNIA CODE OF REGULATIONS)
County Office California Code of Regulations Currentness
Title 5. Education
Division 1. California Department of Education
Chapter 3. Individuals with Exceptional Needs
Subchapter 1. Special Education
Article 3.1. Individuals with Exceptional Needs

(1) Multiple disabilities means concomitant impairments, such as intellectual disability-blindness or intellectual disability-orthopedic impairment, the combination of which causes such severe educational needs that they cannot be accommodated in a special education program solely for one of the impairments. "Multiple disabilities" does not include deaf-blindness.

(6) Intellectual disability means significantly subaverage general intellectual functioning, existing concurrently with缺陷 in adaptive behavior and manifested during the developmental period that adversely affects a child's educational performance.

Colorado

A child with Multiple Disabilities shall have two or more areas of significant impairment, one of which shall be an intellectual disability. The other areas of impairment include: Orthopedic Impairment; Visual Impairment, Including Blindness; Hearing Impairment, Including Deafness; Speech or Language Impairment; Serious Emotional Disability; Autism Spectrum Disorders; Traumatic Brain Injury; or Other Health Impaired. The combination of such impairments creates a unique condition that is evidenced through a multiplicity of severe educational needs which prevent the child from receiving reasonable educational benefit from general education.

New Jersey

Multiply disabled" corresponds to "multiply handicapped" and "multiple disabilities," and means the presence of two or more disabling conditions, the combination of which causes such severe educational needs that they cannot be accommodated in a program designed solely to address one of the impairments. Multiple disabilities includes cognitively impaired-blindness, cognitively impaired-orthopedic impairment, etc. The existence of two disabling conditions alone shall not serve as a basis for a classification of multiply disabled. Eligibility for speech-language services as defined in this section shall not be one of the disabling conditions for classification based on the definition of "multiply disabled." Multiply disabled does not include deaf-blindness.
Maryland

“Multiple disabilities” means concomitant impairments, such as intellectual disability-blindness or intellectual disability-orthopedic impairment, the combination of which causes such severe educational problems that the student cannot be accommodated in special education programs solely for one of the impairments. (b) “Multiple disabilities” does not include students with deaf-blindness.

Oregon

“Children with disabilities” or “students with disabilities” means children or students who require special education because of: autism; communication disorders; deafblindness; emotional disturbances; hearing impairments, including deafness; intellectual disability; orthopedic impairments; other health impairments; specific learning disabilities; traumatic brain injuries; or visual impairments, including blindness.

Determining eligibility is an outcome best understood and obtained by a thorough assessment.
North Carolina: Well Defined Guidelines

North Carolina

1. Multiple Disabilities:
   a. Speech-language impairments
   b. Intellectual/developmental
   c. Orthopedic
   d. Visual
   e. Hearing
   f. Speech impairments
   g. Behavioral/emotional

2. Eligibility Determination:
   a. Evaluation of abilities and performance
   b. Special education
   c. Parental involvement

3. IFSP/IEP Development:
   a. IFSP/IEP development
   b. Parental involvement
   c. Special education

4. Transition:
   a. Transition planning
   b. Parental involvement
   c. Special education

5. Fiscal:
   a. Fiscal management
   b. Parental involvement
   c. Special education

6. Personnel:
   a. Personnel qualifications
   b. Parental involvement
   c. Special education

7. Policy:
   a. Policy development
   b. Parental involvement
   c. Special education

Nevada
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

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
How the Brain Works
Ability, Knowledge and Skill

Components of a Thorough Assessment

**Step 1:** 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

**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
Step 2: Evaluate Impairment, Risk, Strengths & Executive Function

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

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

So what is impairment?

Impairment is the reduced ability to meet the demands of life because of a psychological, physical, or cognitive condition.
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.

Inattention vs. Difficulty completing homework

How does impairment differ from adaptive behavior?

IMP AIRMENT 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)
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)
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)

Rating Scale of Impairment (RSI) Forms

<table>
<thead>
<tr>
<th>RSI (5-12 Years)</th>
<th>RSI (13-18 Years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parent Form: 41 items</td>
<td>Parent Form: 49 items</td>
</tr>
<tr>
<td>Teacher Form: 29 items</td>
<td>Teacher Form: 29 items</td>
</tr>
</tbody>
</table>

RSI Scales:
- School
- Social
- Mobility
- Domestic
- Family
- Self-Care

Relationship Between the RSI and Other Measures
Given all these definitions of EF(s) we wanted to address the behavioral question...

Executive Functions ... or

Executive Function?
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?

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.

Item Factor Analyses – Part 1

Table 8.2. Eigenvalues from the Inter-Item Correlations

<table>
<thead>
<tr>
<th>Form</th>
<th>Factor</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parent</td>
<td></td>
<td>4.0</td>
<td>6.0</td>
<td>13</td>
<td>13</td>
<td>13</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Teacher</td>
<td></td>
<td>5.0</td>
<td>8.0</td>
<td>15</td>
<td>11</td>
<td>11</td>
<td>8.0</td>
<td></td>
</tr>
<tr>
<td>Self-Report</td>
<td></td>
<td>20.0</td>
<td>6.0</td>
<td>12</td>
<td>17</td>
<td>12</td>
<td>18</td>
<td>18</td>
</tr>
</tbody>
</table>

Note: Extraction using the Kaiser criterion. Only the first 15 eigenvalues are presented.
**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.

**Item Factor Analyses – Part 2**

<table>
<thead>
<tr>
<th>Form</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parent</td>
<td>.75</td>
<td>.23</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>Teacher</td>
<td>.78</td>
<td>.23</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>Self-Report</td>
<td>.63</td>
<td>.23</td>
<td>.51</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.51</td>
</tr>
</tbody>
</table>

Note: Extraction method: Png.

**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.
Executive function is how efficiently you do what you decide to do.

**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.

**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; Milari et al., 2012; Reiner et al., 2001
- **Interpersonal problems**: For more information see: Sprague et al., 2011; de Pauw 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; Lee et al., 2009; Kendler et al., 2008; Snyder, 2010
Group Differences: ADHD

<table>
<thead>
<tr>
<th></th>
<th>Parent</th>
<th>Teacher</th>
<th>Self-Report</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADHD</td>
<td>100</td>
<td>90</td>
<td>80</td>
</tr>
<tr>
<td>Control</td>
<td>110</td>
<td>100</td>
<td>90</td>
</tr>
</tbody>
</table>

Group Differences: ASD

<table>
<thead>
<tr>
<th></th>
<th>Parent</th>
<th>Teacher</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Population</td>
<td>100</td>
<td>90</td>
</tr>
</tbody>
</table>

Group Differences: Learning Disabilities

<table>
<thead>
<tr>
<th></th>
<th>Parent</th>
<th>Teacher</th>
<th>Self-Report</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD</td>
<td>100</td>
<td>90</td>
<td>80</td>
</tr>
<tr>
<td>Control</td>
<td>110</td>
<td>100</td>
<td>90</td>
</tr>
</tbody>
</table>
Group Differences: Mood Disorders

<table>
<thead>
<tr>
<th></th>
<th>Parent</th>
<th>Teacher</th>
<th>Self-Report</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Mn</td>
<td>115</td>
<td>112</td>
<td>113</td>
</tr>
<tr>
<td>SD</td>
<td>13.8</td>
<td>12.9</td>
<td>13.9</td>
</tr>
<tr>
<td>95% CI</td>
<td>106.2</td>
<td>106.0</td>
<td>108.4</td>
</tr>
<tr>
<td>p-value</td>
<td>&lt; .001</td>
<td>&lt; .001</td>
<td>&lt; .001</td>
</tr>
</tbody>
</table>

CEFI Gender Differences: Parent Raters
Girls are More Efficient Than Boys

<table>
<thead>
<tr>
<th></th>
<th>Mn</th>
<th>SD</th>
<th>N</th>
<th>Mn</th>
<th>SD</th>
<th>ES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ages 5-11</td>
<td>98.1</td>
<td>14.9</td>
<td>699</td>
<td>101.8</td>
<td>15.0</td>
<td>-0.25</td>
</tr>
<tr>
<td>Ages 12-18</td>
<td>97.9</td>
<td>15.4</td>
<td>350</td>
<td>102.0</td>
<td>14.4</td>
<td>-0.28</td>
</tr>
</tbody>
</table>

CEFI Gender Differences: Teacher Raters
Girls are More Efficient Than Boys

<table>
<thead>
<tr>
<th></th>
<th>Mn</th>
<th>SD</th>
<th>N</th>
<th>Mn</th>
<th>SD</th>
<th>ES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ages 5-11</td>
<td>96.7</td>
<td>14.4</td>
<td>700</td>
<td>103.2</td>
<td>15.0</td>
<td>-0.44</td>
</tr>
<tr>
<td>Ages 12-18</td>
<td>97.0</td>
<td>14.4</td>
<td>350</td>
<td>102.9</td>
<td>15.0</td>
<td>-0.40</td>
</tr>
</tbody>
</table>
Gender Differences: Abilities Associated With EF

![Graph showing executive function scores for boys and girls.]

CEFI Measures 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 WJIII achievement (N = 58) as part of a typical test battery.

CEFI and WISC IV

<table>
<thead>
<tr>
<th>WISC-IV</th>
<th>FS</th>
<th>VC</th>
<th>PR</th>
<th>WM</th>
<th>PS</th>
<th>CEFI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mn</td>
<td>SD</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CEFI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full Scale</td>
<td>.39</td>
<td>.44</td>
<td>.27</td>
<td>.20</td>
<td>.14</td>
<td>.93</td>
</tr>
<tr>
<td>Attention</td>
<td>.39</td>
<td>.33</td>
<td>.32</td>
<td>.40</td>
<td>.35</td>
<td>1.18</td>
</tr>
<tr>
<td>Emotion Regulation</td>
<td>.14</td>
<td>.35</td>
<td>.08</td>
<td>.06</td>
<td>.11</td>
<td>.97</td>
</tr>
<tr>
<td>Flexibility</td>
<td>.57</td>
<td>.58</td>
<td>.45</td>
<td>.46</td>
<td>.37</td>
<td>.98</td>
</tr>
<tr>
<td>Inhibit Control</td>
<td>.21</td>
<td>.19</td>
<td>.13</td>
<td>.08</td>
<td>.17</td>
<td>.97</td>
</tr>
<tr>
<td>Initiation</td>
<td>.25</td>
<td>.28</td>
<td>.14</td>
<td>.21</td>
<td>.25</td>
<td>.91</td>
</tr>
<tr>
<td>Organization</td>
<td>.15</td>
<td>.17</td>
<td>.06</td>
<td>.14</td>
<td>.17</td>
<td>.93</td>
</tr>
<tr>
<td>Planning</td>
<td>.46</td>
<td>.54</td>
<td>.31</td>
<td>.38</td>
<td>.19</td>
<td>.93</td>
</tr>
<tr>
<td>Self-Monitoring</td>
<td>.38</td>
<td>.45</td>
<td>.31</td>
<td>.33</td>
<td>.27</td>
<td>.93</td>
</tr>
<tr>
<td>Working Memory</td>
<td>.38</td>
<td>.43</td>
<td>.31</td>
<td>.36</td>
<td>.23</td>
<td>.92</td>
</tr>
<tr>
<td>WISC-IV FS</td>
<td>10.5</td>
<td>9.6</td>
<td>9.8</td>
<td>9.2</td>
<td>9.0</td>
<td>9.2</td>
</tr>
<tr>
<td>WISC-IV SD</td>
<td>18.1</td>
<td>16.7</td>
<td>17.5</td>
<td>17.5</td>
<td>16.4</td>
<td>17.5</td>
</tr>
</tbody>
</table>

Note: All correlations were corrected for range instability.
CEFI and CAS

<table>
<thead>
<tr>
<th>CEFI</th>
<th>CAS</th>
<th>FS</th>
<th>Plan</th>
<th>Sim</th>
<th>Att</th>
<th>Suc</th>
<th>CEFI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Mn</td>
<td>SD</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full Scale</td>
<td>.45</td>
<td>.49</td>
<td>.43</td>
<td>.37</td>
<td>.32</td>
<td>.32</td>
<td>91.4</td>
</tr>
<tr>
<td>Attention</td>
<td>.40</td>
<td>.42</td>
<td>.29</td>
<td>.30</td>
<td>.15</td>
<td>.15</td>
<td>90.3</td>
</tr>
<tr>
<td>Flexibility</td>
<td>.52</td>
<td>.54</td>
<td>.31</td>
<td>.40</td>
<td>.42</td>
<td>.42</td>
<td>92.2</td>
</tr>
<tr>
<td>Inhibitory Control</td>
<td>.27</td>
<td>.29</td>
<td>.22</td>
<td>.18</td>
<td>.21</td>
<td>.21</td>
<td>96.0</td>
</tr>
<tr>
<td>Initiation</td>
<td>.00</td>
<td>.33</td>
<td>.33</td>
<td>.33</td>
<td>.33</td>
<td>.33</td>
<td>89.0</td>
</tr>
<tr>
<td>Organization</td>
<td>.29</td>
<td>.36</td>
<td>.21</td>
<td>.20</td>
<td>.23</td>
<td>.23</td>
<td>90.5</td>
</tr>
<tr>
<td>Planning</td>
<td>.47</td>
<td>.54</td>
<td>.46</td>
<td>.57</td>
<td>.57</td>
<td>.57</td>
<td>92.5</td>
</tr>
<tr>
<td>Self-Monitoring</td>
<td>.48</td>
<td>.50</td>
<td>.49</td>
<td>.53</td>
<td>.53</td>
<td>.53</td>
<td>91.2</td>
</tr>
<tr>
<td>Working Memory</td>
<td>.48</td>
<td>.66</td>
<td>.45</td>
<td>.38</td>
<td>.30</td>
<td>.30</td>
<td>91.0</td>
</tr>
<tr>
<td>CAS-Mn</td>
<td>17.1</td>
<td>14.5</td>
<td>17.0</td>
<td>15.1</td>
<td>14.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAS SD</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: All correlations were corrected for range instability.

CEFI and Woodcock III

<table>
<thead>
<tr>
<th>WI-III Achievement Tests</th>
<th>CEFI Scale</th>
<th>Total</th>
<th>Broad Reading</th>
<th>Broad Math</th>
<th>Broad Written Language</th>
<th>Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full Scale</td>
<td>51</td>
<td>.48</td>
<td>.49</td>
<td>.47</td>
<td>.49</td>
<td></td>
</tr>
<tr>
<td>Attention</td>
<td>.59</td>
<td>.52</td>
<td>.49</td>
<td>.55</td>
<td>.54</td>
<td></td>
</tr>
<tr>
<td>Emotion Regulation</td>
<td>.18</td>
<td>.27</td>
<td>.15</td>
<td>.17</td>
<td>.18</td>
<td></td>
</tr>
<tr>
<td>Flexibility</td>
<td>.61</td>
<td>.50</td>
<td>.53</td>
<td>.64</td>
<td>.65</td>
<td></td>
</tr>
<tr>
<td>Inhibitory Control</td>
<td>.23</td>
<td>.32</td>
<td>.15</td>
<td>.26</td>
<td>.25</td>
<td></td>
</tr>
<tr>
<td>Initiation</td>
<td>.30</td>
<td>.36</td>
<td>.28</td>
<td>.30</td>
<td>.30</td>
<td></td>
</tr>
<tr>
<td>Organization</td>
<td>.32</td>
<td>.31</td>
<td>.23</td>
<td>.33</td>
<td>.33</td>
<td></td>
</tr>
<tr>
<td>Planning</td>
<td>.58</td>
<td>.54</td>
<td>.57</td>
<td>.50</td>
<td>.56</td>
<td></td>
</tr>
<tr>
<td>Self-Monitoring</td>
<td>.53</td>
<td>.51</td>
<td>.51</td>
<td>.50</td>
<td>.51</td>
<td></td>
</tr>
<tr>
<td>Working Memory</td>
<td>.57</td>
<td>.48</td>
<td>.60</td>
<td>.47</td>
<td>.53</td>
<td></td>
</tr>
</tbody>
</table>

p < .05 p < .01

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.
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

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)
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
  - Eating Disorders
  - Substance Abuse

Reliability

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

<table>
<thead>
<tr>
<th>Scale Type</th>
<th>Parent Form</th>
<th>Self Form</th>
<th>Teacher Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk Summary</td>
<td>0.95</td>
<td>0.92</td>
<td>0.90</td>
</tr>
<tr>
<td>Strength Summary</td>
<td>0.95</td>
<td>0.93</td>
<td>0.95</td>
</tr>
<tr>
<td>RISE Index</td>
<td>0.97</td>
<td>0.94</td>
<td>0.95</td>
</tr>
<tr>
<td>Risk Subscales</td>
<td>(n/a)</td>
<td>(n/a)</td>
<td>(n/a)</td>
</tr>
<tr>
<td>Bullying/Aggression</td>
<td>0.86</td>
<td>0.83</td>
<td>(n/a)</td>
</tr>
<tr>
<td>Delinquency</td>
<td>0.84</td>
<td>0.78</td>
<td>(n/a)</td>
</tr>
<tr>
<td>Eating/Sleeping Problems</td>
<td>0.85</td>
<td>0.82</td>
<td>(n/a)</td>
</tr>
<tr>
<td>Sexual Risk</td>
<td>0.82</td>
<td>0.70</td>
<td>(n/a)</td>
</tr>
<tr>
<td>Substance Abuse</td>
<td>0.88</td>
<td>0.78</td>
<td>(n/a)</td>
</tr>
<tr>
<td>Strength Subscales</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotional Balance</td>
<td>0.89</td>
<td>0.83</td>
<td>0.89</td>
</tr>
<tr>
<td>Interpersonal Skill</td>
<td>0.87</td>
<td>0.83</td>
<td>0.89</td>
</tr>
<tr>
<td>Self-Confidence</td>
<td>0.83</td>
<td>0.78</td>
<td>0.86</td>
</tr>
</tbody>
</table>

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.

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: \(r = .68\); 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.
Concurrent Validity

Highlights of correlational studies with concurrent measures:
- 2 factors (risk and strengths), 6 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.

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

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
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).

Conners CBRS

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

Content Scales
- Emotional Distress
- Academic Difficulties
- Oppositional defiant disorder
- Conduct Disorder
- Hyperactivity/Impulsivity
- Physical Symptoms

Other Clinical Indicators
- Bullying Perpetration
- Bullying Victimization
- Enuresis/Encopresis
- Panic Attack
- Pervasive Developmental Disorder
- Pica
- 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 - All forms only.
Step 4: Decide on Narrow Spectrum Questionnaires

Disruptive Problems:
Conners 3

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

Disruptive Problems

Conners 3rd Edition (Conners 3)
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.
Non-Disruptive Problems

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.
Autism Rating Scales

DSM-5 Non-verbal Norms

ASRS Validity for ages 2-5 Parents

ASD by Parents & Teachers

Clinical Gen Pop

ASRS Validity: Ages 6-18 Parents

ADHD

Clinical

Non-verbal Norms
Anxiety

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.

MASC 2 Scales

- Total Score
- Separation Anxiety/Phobias
- Social Anxiety
- Humiliation/Rejection
- Performance Fears
- GAD Index
- Obsession & Compulsions
- Physical Symptoms
- Panic
- Tense/Restless
- Harm Avoidance Anxiety
- Probability Score
- Inconsistency Index
MASC 2 Scales

Depression

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.
Scale Structure: Parent and Teacher

Total Score
Parent: 17 items
Teacher: 12 items

Emotional Problems
Parent: 9 items
Teacher: 5 items

Functional Problems
Parent: 8 items
Teacher: 7 items

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

Scale Structure: Self-Report (Full Length)

Total Score (all 28 items)

Emotional Problems (15 items)
Negative Mood/Physical Symptoms (9 items)
Negative Self-Esteem (6 items)

Functional Problems (13 items)
Interpersonal Problems (5 items)
Ineffectiveness (8 items)

CDI-2 Self-Report
Each sentence is given either 0, 1, or 2 points
**CDI 2 Profile**

**Emotional Problems**
- Negative mood/Physical symptoms
- Negative self-esteem

**Functional Problems**
- Ineffectiveness

**Interpersonal Problems**

**Total Score**

---

**Cognitive/Neuropsychological Abilities**

**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
**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

---

**Census Matched**

---

**Empirically Derived**

---
Gender and Race Fair

Carefully Developed

• Flexibility with special populations
• Strategy assessment
• Guidelines for providing help.
The examiner can explain the demands of the task in any manner deemed appropriate and in any language.

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

CAS2 Scale and Subtest Structure

Full Scale CAS2
- Planning
  - Planned Codes
  - Planned Connections
  - Planned Number Matching
- Attention
  - Expressive Attention
- Simultaneous
  - Matrices
- Successive
  - Word Series
  - Sentence Rep / Sentence Span
  - Figure Memory
  - Visual Digit Span
• All subtests modified
• Planning subtests have more items
• Speech Rate deleted
• New: Visual Digit Span subtest

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

CAS2 Online Score & Report

▶ 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 Score & Report

• Narrative report can be obtained in Word or PDF

CAS2 Subtests

<table>
<thead>
<tr>
<th>Planning</th>
<th>Attention</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Planned Codes</td>
<td>• Expressive Attention</td>
</tr>
<tr>
<td>• Planned Connections</td>
<td>• Number Detection</td>
</tr>
<tr>
<td>• Planned Number Matching</td>
<td>• Receptive Attention</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Simultaneous</th>
<th>Sequencing</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Matrices</td>
<td>• Word Series</td>
</tr>
<tr>
<td>• Visual Spatial Relations</td>
<td>• Sentence Repetition/Questions</td>
</tr>
<tr>
<td>• Figure Memory</td>
<td>• Visual Digit Span</td>
</tr>
</tbody>
</table>

CAS2: Brief

Structure and features
CAS2: Brief for Ages 4-18 years

- Give in 20 minutes
- Yields PASS and Total standard scores (Mn 100, SD 15)
- All items are different from CAS2
  - Planned Codes
  - Simultaneous Matrices
  - Expressive Attention
- New Subtest
  - Successive Digits (forward only)

CAS2: Brief Simultaneous Matrices
CAS2: Brief Planned Codes & Successive Digits
• Planned Codes has 8 items using numbers not letters and has different patterns
• Successive Digits uses numbers (not words)

CAS2: Rating Scale
• To Assess Neurocognitive Abilities
  – PASS Theory
• CAS-2 Rating scale is for teachers only
Cognitive Assessment System: Rating Scale (CAS2: Rating Scale)

- Norm referenced measure of behaviors related to cognitive / neuropsychological theory called PASS (Planning, Attention, Simultaneous, and Successive).

- 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.

**CAS2: Rating Scale Planning**

**Directions for Item 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 the child or adolescent thinks, acts, and solves problems.

**During the past month, how often did the child or adolescent…**

1. produce a well-written sentence or a story?
2. evaluate his or her own actions?
3. produce several ways to solve a problem?
4. know many ideas about how to do things?
5. have a good idea about how to complete a task?
6. solve a problem with a new solution when the old one did not work?
7. use information from many sources when doing tasks?
8. effectively solve new problems?
9. have well-defined goals?
10. consider new ways to finish a task?

**PASS Processing Scores**

- ADHD
- ASD
- SLD

- Graph showing scores for Planning, Simultaneous, Attention, Successive.
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

Multiple Handicap or Primary/Secondary?

ADOPT A LEARNING TO RIDE A BICYCLE MINDSET!
Questions?

Thank You!

Sam Goldstein, Ph.D.

TEDx
Sam Goldstein, Ph.D.
sam@samgoldstein.com
The Power Of Resilience
https://www.youtube.com/watch?v=KiZ4t4s6w7E

- www.samgoldstein.com
- info@samgoldstein.com
- @drsamgoldstein
- @doctorsamgoldstein