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Diagnosing Executive Dysfunction in School-Aged Children

Jill K. Fahy, MA, CCC-SLP

Moderated by:
Amy Natho, MS, CCC-SLP, CEU Administrator, SpeechPathology.com

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Diagnosing Executive Dysfunction in School-Aged Children

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Eastern Illinois University

SpeechPathology.com
WEBINAR September 17, 2019

CONTINUED

Disclosures
Jill K. Fahy

- Has the following relevant financial relationships to disclose:
  - Salaried associate professor in Communication Disorders & Sciences at Eastern Illinois University, Charleston, IL
  - Co-author of and receives royalties for a text, The Source: Development of Executive Functions, 2nd Ed., PRO-ED, Inc.
  - Receives honoraria for CE courses and seminars, including this one.

5

CONTINUED

Learner Outcomes

After this course, participants will be able to:

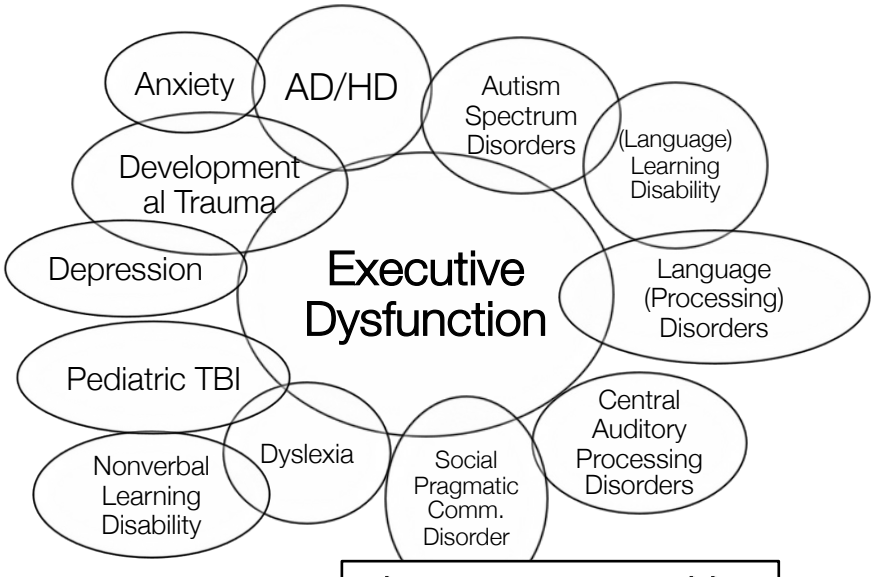
- Identify features and profiles of executive dysfunction in school-aged children.
- Describe diagnostic challenges for the assessment of executive dysfunction in school-aged children.
- Identify diagnostic priorities and rules to help clarify the treatment needs of school-aged children with executive dysfunction.

6

The EF Problem

Which students are we talking about….?
And why?

7



a heterogeneous problem

8

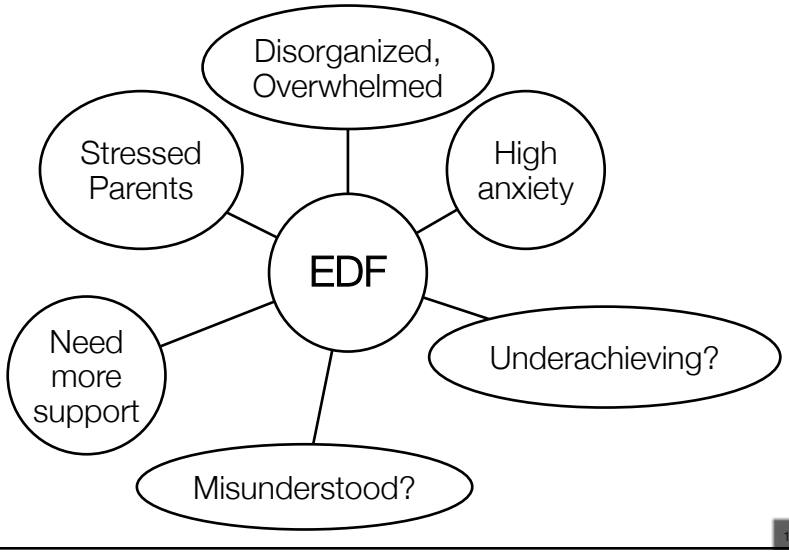
EF "Fails"
The EDF student often struggles to…

- Locate homework
- Transport papers to/from
- Check own work
- Identify priorities
- Estimate time
- Anticipate problems
- Organize self
- Initiate in time
- Use a planner
- Focus on information
- Inhibit or regulate impulses
- Shift or adapt efforts
- Work strategically
- Appraise own efforts
- Understand need for compensatory strategies
- Learn or use compensatory strategies

But for different reasons….

9

Shared Features



10

Living Up to Expectations

- "He's old enough to….."
- "Her younger sister can do more…."
- "They tell me he's not trying hard enough"
- "They say I need to stop babying her"
- "My mother says he'll never learn if I keep helping him"
- "I don't have to do this for other students"
- "I don't see any problem in the classroom….he just needs to focus"

11

Students with "good" EF Skills?

- "works really hard"
- "always on time"
- "doesn't need reminders"
- "pays attention well"
- "responsible"
- Self-regulate
- Self-motivated
- High achievers
- Socially adept
- Adaptable

12

What "are" Executive Functions?

13

Defining Executive Functions

- Use of specific, metacognitive processes and skills
  - Perhaps as many as 9?
  - Emerging, developing, maturing at different stages
- Allow for adaptation, novel responses, shifting efforts
  - Not merely routine, learned behaviors or scripts
  - Unplanned, unlearned, different context
- In the social/situation context of others and surroundings
  - Which may or may not be predictable, or explicit
- Provide for self-regulation, goal-oriented behavior, and attainment of future goals
  - Goal is to have planful, controlled, deliberate efforts……
- NOT the same as static knowledge, or IQ

14

CONTINUED

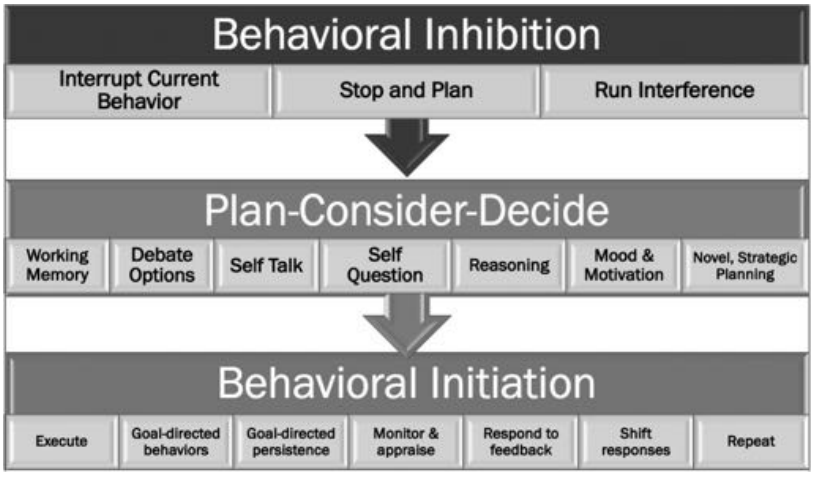
Briefly: The 9 Executive Functions

1. Attention
2. Working memory
3. Inhibition
4. Fluency
5. Strategic planning/organization
6. Initiation
7. Inhibition
8. Shifting
9. Monitoring and regulation

15

CONTINUED

Conceptualizing Executive Functions

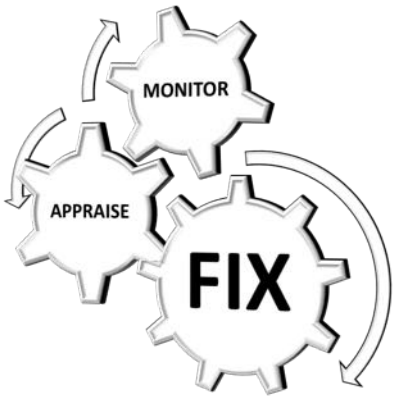


16

CONTINUED

Self-Regulation

- Self-regulation requires virtually all other EFs
- What if you don't notice?
- What if you misinterpret?
- What if you can't generate options?
- What if you can't inhibit?



17

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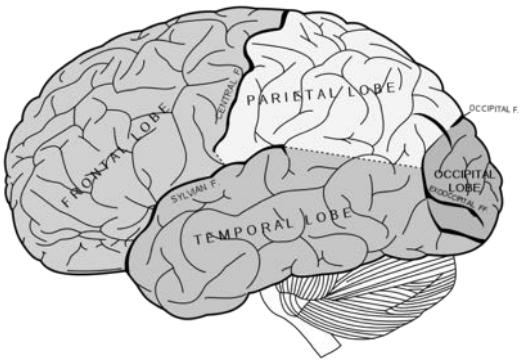
Brain Lessons
Neurology & Development

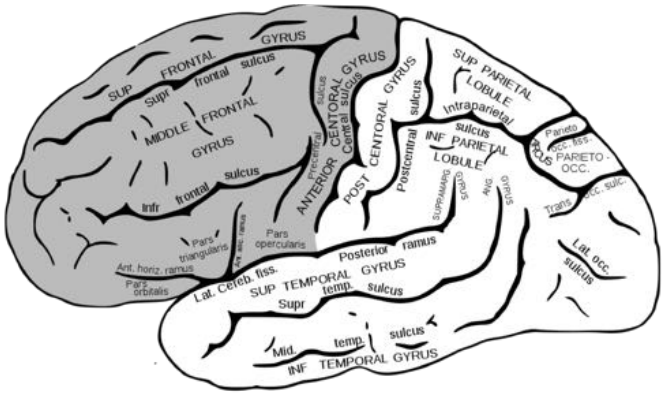


18

Complex Neural Networks

19

Frontal Lobe:
Orchestration of Movement



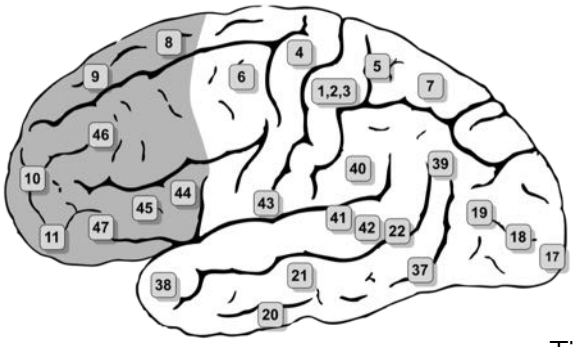
Plan
Initiate
Integrate
Edit
Orchestrate
Regulate

20

CONTINUED

Prefrontal Cortex:

Conscious Regulation of Behavioral Movement



Direct attention
Manipulate in WM
Orchestrate plans
Monitor—Shift
Withhold—Initiate
Override emotions
Integrate input
Time- & Context-Relevant Behavior

21

CONTINUED

EF Development

Neurologically complex networks
25-year developmental span
…a lot of things can go wrong

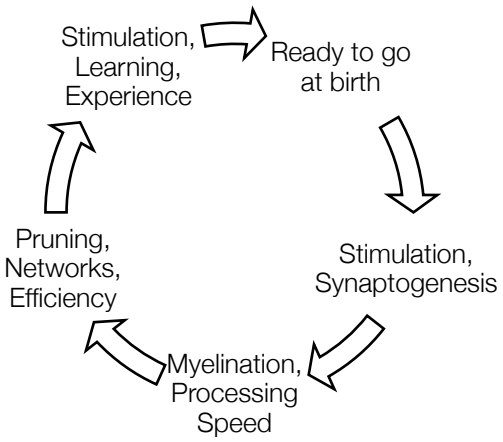
Yet required for academic, vocational, social success
Often an assumed skill

22

CONTINUED

Neurological Maturation

- Genetics
- Syndromes
- Birth complications
- Neurological trauma
- Environmental/developmental trauma
- SES variables
- Nutrition
- Parental/caregiver interactions
- Predictability and stability of environment



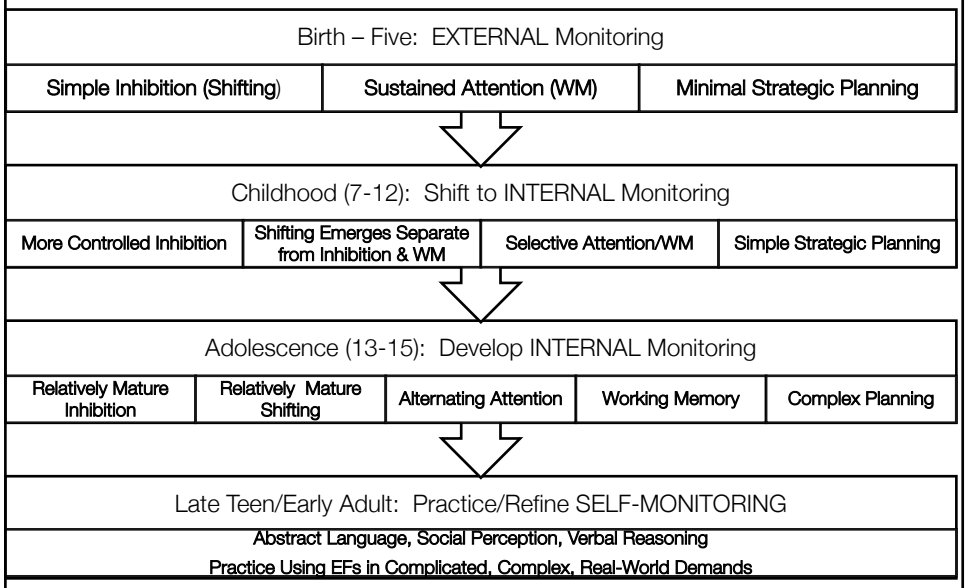
23

What's the Point?

Make 'good' decisions → *Stay out of legal trouble*
Get things done on time → *Keep your job*
Adapt and respond to unexpected → *Cope w/ life*
Adapt social behavior → *Make/keep friends, partners*
Gain life wisdom → *Don't repeat mistakes*
Focus outside the self → *Be gracious, helpful, serve*
Develop altruistic tendencies → *Service, volunteerism*

24

Progression & Stages of EF Development



25

CONTINUED

EFs in Infants

- Emerging attention
  - Joint attention,
  - Surging attentional control
- Emerging inhibition
  - Shift to new stimuli, but not with intentional control
  - Minimal capacity to inhibit immediate needs, interests
- Rudimentary processing of information
  - Sensory systems developing, refining
  - Language, visual, tactile processing
- Sporadic motoric control…developing
- Provide routine, predictability, caregiver engagement

26

Early Toddler & Preschool EF Skills

- The Two-Year Old
- Emerging capacity to process raw data, control movement
- Highly distractible, fleeting attention,
- Immediate gratification
- Share tasks, activities
- Develop attention
- Notice, wonder
- Preschoolers
- Continual improvements in attention, inhibition
- Surge in language, working memory,
- Deliberate attempts to control efforts
- Trial-and-error approaches
- Make, do, play, pretend
- Anticipate, plan

27

EFs at 5-6: Shift in Skills

- Longer attention span, less easily distracted
- Begin to self-inhibit & retain short rules, instructions
- Emerging syntax begins to allow for self-talk
- Basic plans become more strategic; develop options
- Trouble shifting between tasks, distractions
- Inhibition is still challenging & plans are simple!

DON'T DISTRACT!
Organize Environment!
BE ON-TARGET WITH LANGUAGE

28

EFs Ages 7 - 9

- Attend for longer periods of time, filter irrelevant
- Some self-inhibition & shifting between parameters
- Some alternate plans/strategies
- Decent language for beginning self-talk, organizing
- Need EFs to help academic, social, learning

Don't overload! Don't add to distractions
Deal with language & attention delays NOW
…..or fall behind

29

EFs at 10-11

- Continued surge in selective attention
- Can tune out a lot, and shift effort
- Continued improvement in working memory
- More sophisticated language and relative planning
- Inhibition SOMETIMES is adult-like….but
  - Still have another surge in reasoning yet ahead….
  - Poor anticipation of consequences
  - Failure to consider all variables

School requires more EF independence
But the brain is inconsistent

30

EFs at 15: The Teen Brain

- Deceptive skills
- EFs in lab-based tasks are relatively mature
- They should have fairly complex language/narratives
- Display complex, multi-variable planning
- Can deduce gist, relevance of details…… within limits
- Still struggling to fully see perspective of others

Teens are inconsistent.

Still need perspective & experience

31

What Constitutes an "Adult" Brain?

- Ongoing intellectual development beyond "18"
- 'Relative maturity' of isolated EF skills
  - But not when multiple EFs applied in real-world
  - Inconsistency, need for practical, applied experience
- Legal implications?
  - Is 12 year old thinking 'adult' thinking?
  - What about 16 year old AD/HD & LD planning?
  - How about 19 year old ASD planning?

32

EF Profiles

Who's in your classroom?

33

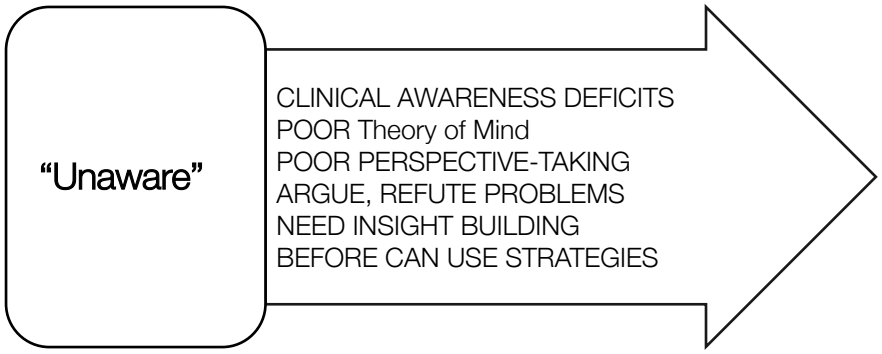
Attention Deficits
Auditory or Language Processing Disorders
Autism Spectrum Disorders
Social Cognitive/Communication Disorders

The "Wanderer"

INATTENTIVE, INTERNAL DISTRACTION
PROMPTS TO FOCUS, REDIRECT
FAIL TO RECOGNIZE PROMPTS, LOST
POOR WORKING MEMORY, FORGETFUL
POOR TIME-SENSE
NEED ATTENTION AND AWARENESS

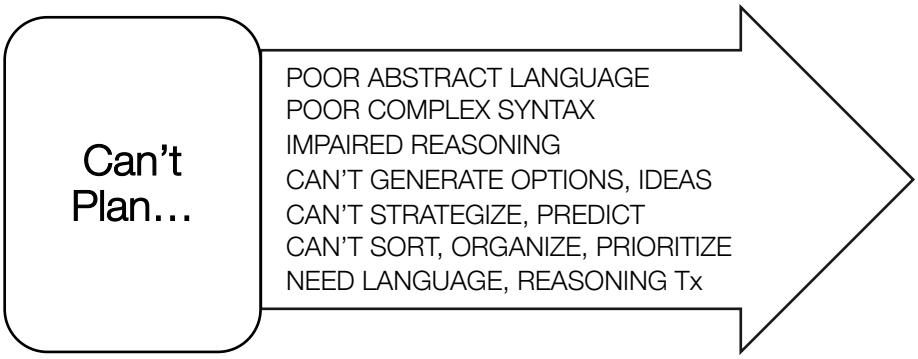
34

Autism Spectrum Disorders
Social Communication Disorders
Nonverbal Learning Disability



35

Language Processing Disorder
Disrupted Development of Adolescent Language
Learning Disabilities (Verbal and Nonverbal)
Autism Spectrum Disorders, AD/HD



36

Variety of Diagnoses…..

Can't Start

- LACK URGENCY
- PROMPT-DEPENDENT
- POOR ESTIMATION OF TIME, TASKS
- VAGUE REASONING
- GLOBAL PLANS
- OVERWHELMED, OR UNCONCERNED
- NEED PLANNING AND AWARENESS

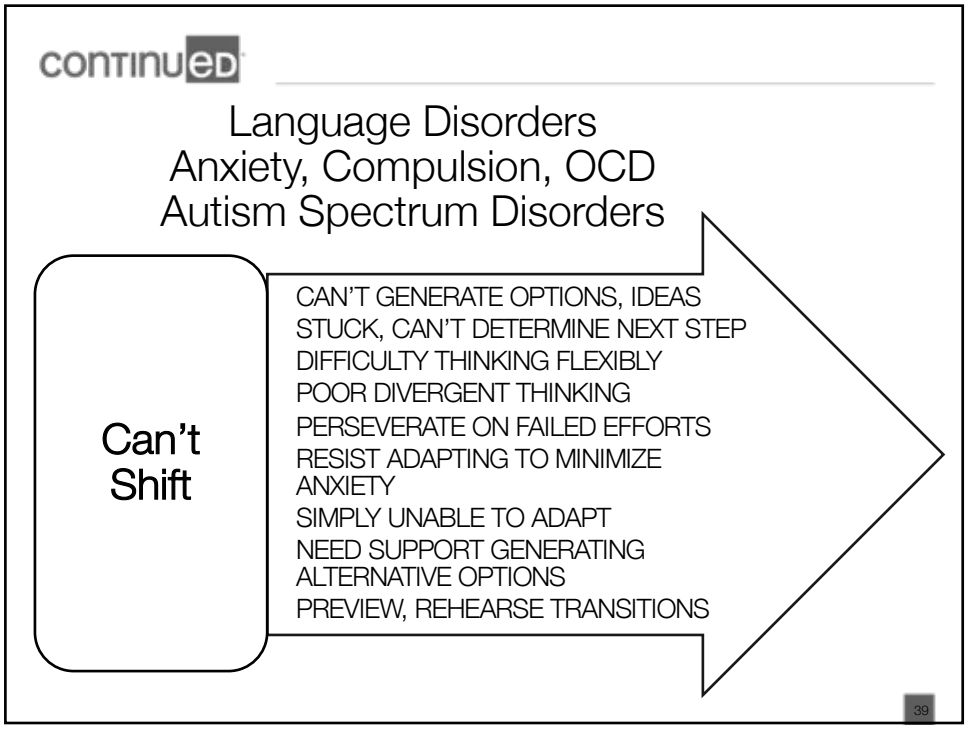
37

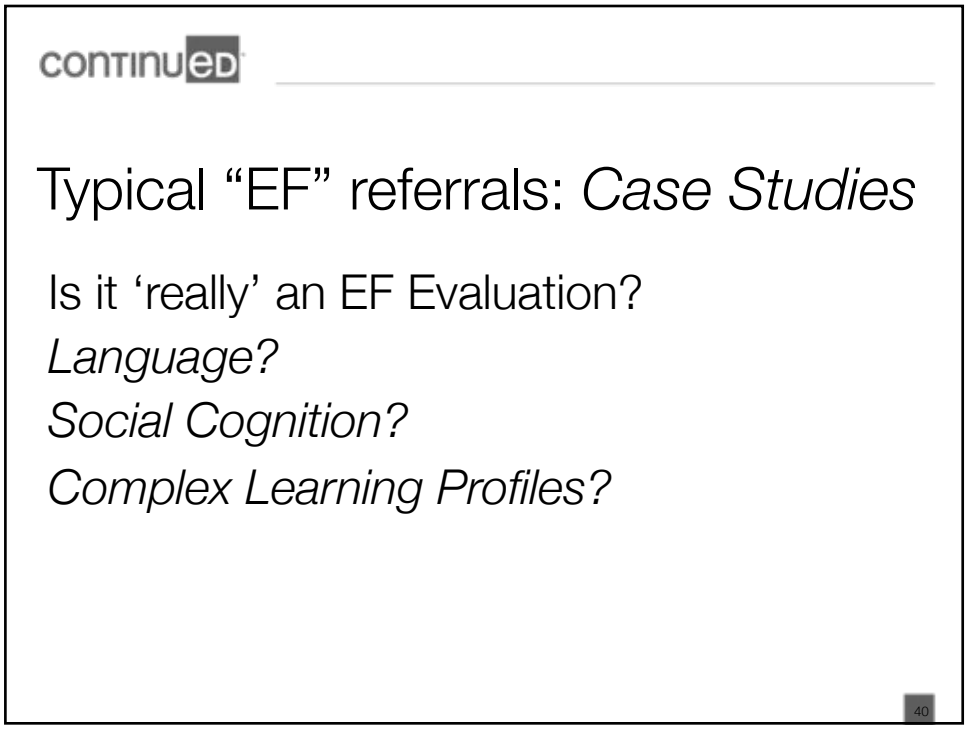
Variety of Diagnoses… AD/HD

Can't Stop

- INATTENTIVE, HYPERACTIVE, IMPULSIVE
- DON'T NOTICE, NOT AWARE, UNSAFE
- CARELESS ERRORS, MISTAKES
- START WITHOUT PLANS, MATERIALS
- FAIL TO ANTICIPATE CONSEQUENCES
- PROMPTS TO STOP, FOCUS, LOOK
- NEED TO DEVELOP INHIBITION…
- NEED TO MANAGE ATTENTION…
- NEED SELF-TALK → SELF-REGULATE

38


Language Disorders
Anxiety, Compulsion, OCD
Autism Spectrum Disorders
Can't Shift
CAN'T GENERATE OPTIONS, IDEAS
STUCK, CAN'T DETERMINE NEXT STEP
DIFFICULTY THINKING FLEXIBLY
POOR DIVERGENT THINKING
PERSEVERATE ON FAILED EFFORTS
RESIST ADAPTING TO MINIMIZE ANXIETY
SIMPLY UNABLE TO ADAPT
NEED SUPPORT GENERATING ALTERNATIVE OPTIONS
PREVIEW, REHEARSE TRANSITIONS
39


Typical "EF" referrals: *Case Studies*
Is it 'really' an EF Evaluation?
Language?
Social Cognition?
Complex Learning Profiles?
40

Tanner: 8;1 2nd-grader

- Behavioral problems, facing suspension
- Known challenges
  - Diagnosed with AD/HD, Hyperactive/Inattentive
  - OT describes fine motor problems, hypersensitivity
  - Mom observes difficulty with spelling, decoding
  - Briefly on SLP caseload but discharged – listening, inference
- No services other than a 504 Plan
  - Increase frustration tolerance
  - Manage attention
  - Limit impulsivity, and 'keep hands to self in recess'

41

Dx Questions for Tanner

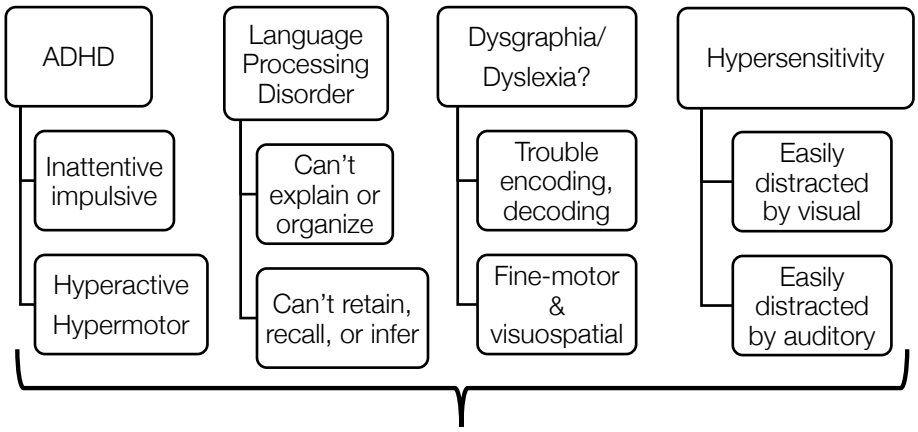
- Primary Question: What about Language?
  - Test battery planned accordingly
  - Majority of evaluation focused on this
  - Diagnosed with Language Processing Disorder
- Secondary Question: What about EFs?
  - Basic, cursory assessment of key EFs
  - To establish a foundation and baseline
  - Diagnosed with Executive Dysfunction

42

CONTINUED

Does Tanner have EDF?

Yes, associated w/ADHD, LPD, Tourette's



Executive Dysfunction

43

CONTINUED

Kyle, 17 year-old male

- High school junior at alternative school
  - Does he have Autism?
- Multiple challenges:
  - ADHD
    - Impulsive, inattentive, disorganized, late
    - Poor monitoring of work, limited awareness
  - Depression, Anxiety, Emotional Disability
    - Suicidal x2, w/ subsequent hospitalizations
    - Externalizing behaviors
  - Externalizing, behavioral, and social 'issues'
    - Difficulty interpreting implied expectations, nonverbals
    - Unable to recognize 'why' he needs to do things

44

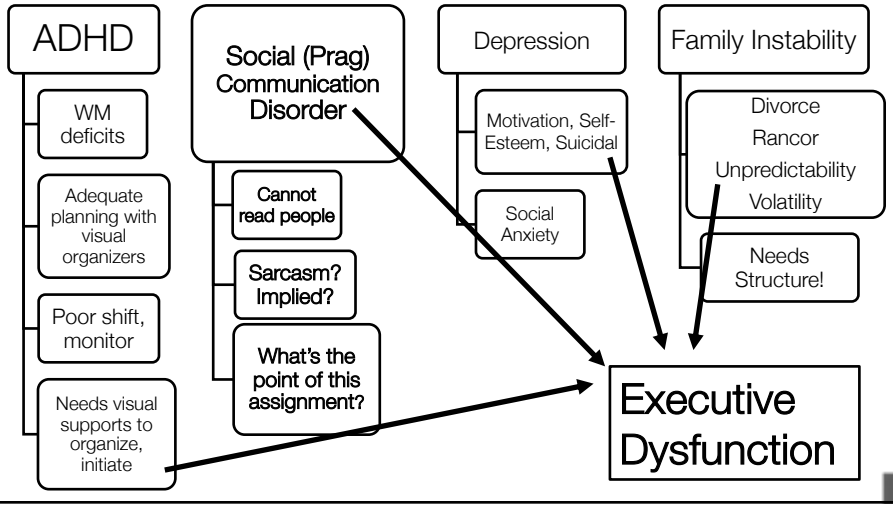
Dx Questions for Kyle

- Primary Question: What about Social Cognition?
  - Test battery planned accordingly
  - Majority of evaluation focused on this
  - Ruled out Autism Spectrum Disorder…..
    - Failed to meet RRB criteria
    - Onset of social difficulty not documented til 1st grade
  - Diagnosed with Social (Pragmatic) Communication Disorder
- Secondary Question: What about EFs?
  - Evaluated more complex aspects of EFs
  - To establish a foundation and baseline
  - Diagnosed with Executive Dysfunction….

45

Does Kyle have EDF?

Yes, associated with SPCD and ADHD



46

Matthew: 15;10 Sophomore

- Described as 'star athlete', yet socially naive
- Multiple Diagnoses
  - AD/HD, Anxiety
  - Math Disability
  - Reading Disability
    - Dysphonetic & Dyseidetic Dyslexia
    - Reading at 5th grade level
  - Dysgraphia
- IEP services
  - Specialized instruction for Math, Reading, English
  - Resource room for academic support, numerous accommodations
  - Social work services

47

Matthew: Speech/Language Concerns

- Multiple concerns by parents, teachers
  - Cannot understand spoken information
  - Cannot retain spoken instructions
  - Needs constant repetition and simplification
  - Fails to get jokes
  - Doesn't understand lectures
  - Can't explain himself or formulate verbal responses
  - Gives up, "I don't know"
  - Poor self image, "I'm stupid"
- Evaluated by SLP for first time last year – ineligible

48

CONTINUED

Matthew: EF Concerns

- "Virtually dependent"
  - Requires multiple texts daily for schedule, plans, reminders
  - Unable to organize, monitor, locate, track possessions
  - Works impulsively with no awareness, no self-checking
  - No ability to estimate time
  - Unable to predict needs or anticipate problems
  - Unable to strategically plan or initiate tasks
  - Cannot determine what to write in his planner
  - Everything must be clarified, repeated, simplified, restated
  - Constant need for prompts, redirection

49

CONTINUED

Dx Questions for Matthew

- Primary Question: What about LANGUAGE?
  - Extensive test battery planned accordingly
  - Higher level adolescent language, reasoning
  - Diagnosed with Language Processing Disorder
  - Suspected Auditory Processing Disorder (referral)
- Secondary Question: What about SOCIAL COGNITION
  - Failed to meet criteria for ASD or S(P)CD
  - Social-language deficits noted throughout
- Tertiary Question: What about EFs?
  - Evaluated more complex aspects of EFs
  - To establish a foundation and baseline
  - Diagnosed with Executive Dysfunction….

50

Conflicting Test Profiles: LANGUAGE

Language Assessments from School	Standard Scores
Peabody Picture Vocabulary Test – 4th Edition (PPVT-4)	SS = 86
Expressive Vocabulary Test – 2nd Edition (EVT-2)	SS = 82*
CELF-5, Core Language Index	SS = 85*
CELF-5, Receptive Language Index	SS = 82*
CELF-5, Expressive Language Index	SS = 91

51

Conflicting Test Profiles: LANGUAGE

Language Assessments at Clinic	**Scores**
TILLS Listening Comprehension Subtest	Scaled Score = 2**
TILLS Following Directions Subtest	Scaled Score = 6*
Oral Passage Understanding Scale (OPUS)	Scaled Score = 81*
OPUS Total Inference Score	Lower 25%ile
OPUS Total Memory Score	Lower 25%ile
TOAL-4 Word Opposites	Scaled Score = 7*
TOAL-4 Word Derivations	Scaled Score = 6**
TOAL-4 Spoken Analogies	Scaled Score = 3***
TOAL-4 Spoken Language Composite	SS = 74*
TOAL-4 Word Similarities	Scaled Score = 4***
TOAL-4 Sentence Combining	Scaled Score = 3***
TOAL-4 Orthographic Usage	Scaled Score = 6**
TOAL-4 Written Language Composite	SS = 65***
TOAL-4 General Language Composite	SS = 65***

52

Adding to the Complexity: Higher-Level Language, Reasoning Failure

S-FAVRES	Raw Score	Standard Score	Performance Level
Total Time	21	123*	Above Average (too fast…)
Total Accuracy	8	7***	Significantly Below Average
Total Rationale	5	0***	Significantly Below Average
Reasoning Subskills	56	54**	Significantly Below Average

53

Confounding the Problem: Social Language Deficits

Social Language Development Test – Adolescent (SLDT-A)	Raw Score	%ile	Standard Score	Performance Level
Social Interaction	8	20	87	Average
Interpreting Ironic Statements	4	7	78*	Below Average
Interpreting Social Language	4	3	71*	Below Average
Problem Solving (Stating/Justifying Solutions to Social Problems)	4	1	66**	Well Below Average
Making Inferences	0	<2	<68**	Well Below Average
TOTAL TEST	20	1	67**	Well Below Average

54

Conflicting Observations for EFs

BRIEF-2	Parent		Teacher		Self	
Scale/Index	T-Score	%ile	T-Score	%ile	T-Score	%ile
Inhibit	82****	99	85****	98	59*	80
Self-Monitor	63**	93	84****	>99	47*	63
Behavior Regulation Index (BRI)	76****	99	85****	98	54*	73
Shift	66***	94	80****	98	65***	90
Emotional Control	58*	80	84****	98	41*	38
Emotional Regulation Index (ERI)	62**	88	84****	98	55*	74
Initiate	79****	>99	82****	>99	n/a	n/a
Working Memory	77****	99	89****	99	59*	84
Plan/Organize	77****	99	81****	99	62**	88
Task Monitor	73****	99	79****	>99	n/a	n/a
Task Completion	n/a	n/a	n/a	n/a	64**	91
Organization of Materials	73****	98	83****	99	n/a	n/a
Cognitive Regulation Index (CRI)	80****	>99	85****	99	63**	88
Global Executive Composite (GEC)	78****	98	87****	98	60**	81

Mean T-Score =50, Standard Deviation (SD) = 10; *<60 score is at the mean for age/gender;
**60-64 = 1-1.5 SD Above Mean, Mildly Elevated Scores;
***65-69 = 1.5-2 SD Above Mean, Potentially Clinically Elevated;
****70+ = 2SD Above Mean, Clinically Elevated

55

Matthew: More EF Tests

- Test of Everyday Attention for Children (TEA-Ch)
- Delis-Kaplan Executive Function System (D-KEFS)
  - Trail Making Test
  - Verbal Fluency Test
  - Design Fluency Test
  - Color-Word Interference Test
  - Tower Test
- Behavioral Assessment of Dysexecutive Syndrome – Children (BADS-C)
- Behavioral Rating Inventory of Executive System- 2 (BRIEF-2)*

56

Matthew's Language Processing Disorder

- Profile of deficits impacting language-based learning
  - Comprehending single/multi-sentence & multi-step
  - Comprehending paragraph spoken text, implied information
  - Using semantic knowledge to explain, clarify, compare, contrast
  - Using semantic knowledge to form arguments, predict outcomes
  - Using simple syntax and basic grammar in written expression
  - Comprehending irony, sarcasm, humor, teasing, sincerity, deception
  - Using social language to negotiate, navigate, cooperate, empathize
  - Interpreting nonverbal social clues

57

Matthew's Clinical Impressions, 2nd Evaluation

Client presents with Executive Dysfunction (EDF) associated with multiple co-existing diagnoses of AD/HD, Language Processing Disorder (LPD), Dyslexia, and Dysgraphia. Please see the initial report from this Clinic for full details about Client's LPD and additional, initial impressions about his EDF.

1. Functional reports and additional background from this evaluation also suggest that Client has deficits interpreting nonverbal social communication cues accurately. This observation is in addition to deficits interpreting and using language for social situations, which was documented in our initial report. Client's nonverbal perspective-taking skills should be further evaluated to clearly understand how accurately he interprets facial expressions, gestures, body language, vocal prosody, and theory of mind.

2. Client's difficulty learning new information suggest the need to further evaluate memory skills. Client's working memory deficits are clearly noted. However, his difficulty acquiring information even with extensive simplification, visual notation, rehearsal, and repetition, suggests the possibility of deficits encoding, consolidating, and storing information in long term recall.

58

Matthew's Clinical Impressions, 2nd Evaluation

1. Client's EF profile is characterized by lack of insight and accurate self-appraisal for his own strengths and weaknesses; deficits sustaining and shifting attention for auditory and auditory+visual demands; impulsive initiation of tasks with less-than-strategic efforts; impulsive initiation of social behavior without attempts to analyze or interpret first; difficult initiating possibilities, ideas, strategies; commission of inadvertent errors in task performance due to overlooking/inattention; and difficulty shifting efforts and responses.

Attention: …weakness overall….low-average to below average performance in selective/focused, sustained, and divided attentional demands as noted on the TEA-Ch subtests. Visual attention was relatively better than auditory attention….

59

Matthew's Clinical Impressions, 2nd Evaluation

Strategic Planning/Organization: …..Client works diligently yet inefficiently on tasks, starting his efforts rapidly and without attempting to generate potential plans or consider whether they might be relevant or strategic….. immediate efforts resulted in moves that were 'clearly' not viable, or which inadvertently caused him to have to 'undo' or account for non-strategic efforts……

Initiation: ….displayed little to no difficulty initiating responses. …initiated somewhat impulsively on most tasks, beginning before he had perhaps taken time to plan….. When printed instructions were made available, Client took little to no time attempting to read the information. In contrast, Client presents with reported functional difficulty initiating tasks on his own at home and school unless provided with explicit, step-by-step instructions and times….

60

Matthew's Clinical Impressions, 2nd Evaluation

Self-Monitoring: …patterns of initiating and completing work without self-checking or self-monitoring…. Client's errors and rule-breaking on the BADS-C Zoo Map Test 1 & 2…..assumption that his work was correct, coupled with his pattern of immediately starting work without double-checking or re-reading to confirm his initial impressions. On the BADS-C Six Parts Test, …demonstrated no awareness that he had continuously repeated Step 1 of each task and failed to shift to any of the Step 2 parts until the last seconds available to him. Overall, failure to double check efforts was noted as well, during testing on this date as well as during Client's initial evaluation at this Clinic. As a result, Client's perceptions were that he did well throughout.

61

Diagnostic Challenges

62

CONTINUED

Complexity of Developing EF Skills:
Cognitive? Language? Social? Reasoning?

- Self / Task Monitoring & Regulation
- Social Insight and Self-Appraisal
- Behavioral and Cognitive Shifting Skills
- Strategic Planning and Organization Skills
- Idea Fluency and Flexible Thinking Skills
- Language, Reasoning, Predicting, Explaining Skills
- Inhibitory and Working Memory Skills
- Attentional Foundations

63

CONTINUED

Time is NOT Always on our Side

- Parents tend to notice EF deficits before schools do…
- Often, younger children with subtle EF deficits 'look good'
  - Until they don't…. And then they're failing
- By the time an EF problem is noticed, evaluated, identified
  - Years have gone by
- Most of the time, have to back up before I can evaluate EFs
- By then, these kids are typically in high school
  - Panicked parents
  - Frantic educators doing transition planning

64

What to Call the Problem?

- Diagnostic definition?
  - Nothing in the DSM-5 as stand-alone 'diagnosis'
  - No uniform agreement as to how 'bad'
  - Know it when you see it?
- What's in a name?
  - Executive Dysfunction (EDF)
  - EF Deficits/Disorder
  - Dysexecutive Syndrome
- Descriptors fail to clarify
  - Etiology of the problem(s)
  - Individual profile of EF deficits

65

Ronan is diagnosed with a receptive/expressive language disorder and concomitant executive dysfunction

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Ronan is diagnosed with autism spectrum disorder with concomitant EDF

Ronan is diagnosed with autism spectrum disorder, language disorder, AD/HD, and concomitant EDF

Ronan is diagnosed with ASD, generalized anxiety, AD/HD, OCD, and concomitant EDF

66

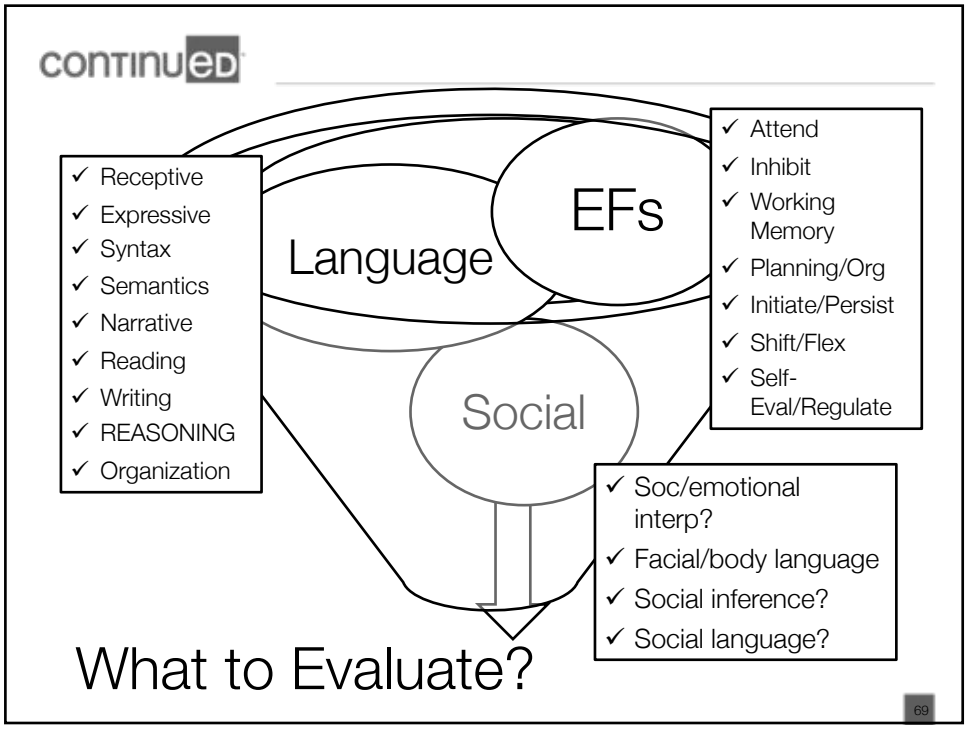
Time & Money… Training & Interpretation

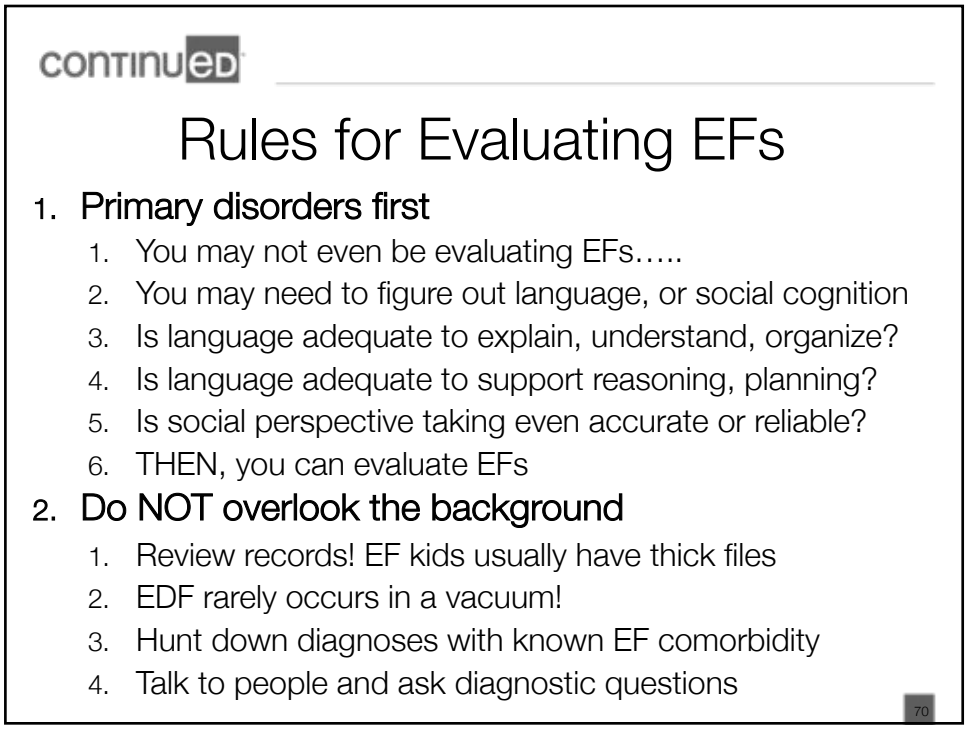
- Busy caseloads
- Lean budgets
- What kind of tests
- Which tests
- Eligibility criteria
- What is the fundamental problem?
- How many problems are there?
- How to interpret overlapping EF skills with underlying language, social, cognitive issues?

67

Rules for Assessment of EFs

68


CONTINUED
✓ Receptive
✓ Expressive
✓ Syntax
✓ Semantics
✓ Narrative
✓ Reading
✓ Writing
✓ REASONING
✓ Organization
Language
EFs
Social
✓ Attend
✓ Inhibit
✓ Working Memory
✓ Planning/Org
✓ Initiate/Persist
✓ Shift/Flex
✓ Self-Eval/Regulate
✓ Soc/emotional interp?
✓ Facial/body language
✓ Social inference?
✓ Social language?
What to Evaluate?
69


CONTINUED
Rules for Evaluating EFs
1. Primary disorders first
1. You may not even be evaluating EFs…..
2. You may need to figure out language, or social cognition
3. Is language adequate to explain, understand, organize?
4. Is language adequate to support reasoning, planning?
5. Is social perspective taking even accurate or reliable?
6. THEN, you can evaluate EFs
2. Do NOT overlook the background
1. Review records! EF kids usually have thick files
2. EDF rarely occurs in a vacuum!
3. Hunt down diagnoses with known EF comorbidity
4. Talk to people and ask diagnostic questions
70

Rules for Evaluating EFs

3. Try to conduct a multi-dimensional EF evaluation
   1. Informal + standardized
   2. Lab-based tasks + ecologically valid tasks
   3. Direct measures + indirect measures
   4. You may not have time, or money, or tools
   5. You may have to collaborate, cooperate, refer
   6. You may need to devise well-structured novel tasks & use clinical observation tools to capture EF skills
4. Understand test construct and validity
   3. What, exactly, are you evaluating, anyway? Do you know?
   4. Which EF skill is required? How is it demonstrated?
   5. Verbal, visual, kinesthetic? WHAT?

71

Rules for Evaluating EFs

5. Don't insert yourself as a surrogate frontal lobe
   1. This is about the child's PFC/EFs, not yours!
   2. Do NOT give solutions, steps or instructions
   3. Do NOT point out errors or offer to fix problems
   4. Pay careful attention to when, or if, you can prompt
   5. Performance/Scores depend upon accuracy, efficiency, flexibility, monitoring, etc. Do not interfere!
6. Analyze the EF profile; Work through each EF skill
   1. WNL
   2. Clinically impaired
   3. Relative strengths
   4. Relative weaknesses

72

Which is it?

'Laziness'? 'Disinterest'? 'Refusal'?

Or poor WM, language comprehension issues
Can't generate ideas, retrieve information
Completely unable to plan or organize
Significant initiation deficits
Inattentive, impulsive, distracted, disorganized
Confused, overwhelmed
Socially unaware
Lacks self-appraisal or insight

73

Types of EF Assessment Tools

Adapted from McCloskey, 2009

Informal Assessment	Standardized EF Questionnaires
Interviews Record reviews Observation tools Work samples --- Ecologically-Valid Novel Task Completion	Teacher, Parent Self, Significant Other --- Home v. School Environments
	Standardized Tests of EF Skills Lab Based v. Ecologically Based Tasks --- Which EFs? Verbal or visual or kinesthetic tasks?

74

Standardized Tests for EFs

- Behavioral Assessment of Dysexecutive Syndrome – Children (BADS-C)
  - Ages 6 – 16; 6 subtests & Dysexecutive Questionnaire
  - Hands-on, manipulable; visual
  - Subtests evaluate for inhibition, shifting, planning, sequencing, monitoring
- Delis-Kaplan Executive Function System (D-KEFS)
  - Ages 8 – 89
  - 9 stand alone subtests (Design Fluency, Verbal Fluency Trail Making, Color-Word Interference, Tower Test, Sorting, Twenty Questions, Word Context, Proverb,
- NEPSY-II
  - Ages 3 – 16; 32 subtests in 6 domains
    - Language, Social Perception, Memory, Sensorimotor, Visuospatial Processing, EF
  - EF Subtests: Attention, Verbal/Nonverbal Inhibition, Working Memory, Verbal/Design Fluency, Strategic Planning/Organization, Shifting
  - Clinical Populations: AD/HD, ASD, DHH, ED, LD, TBI, Math and Reading Disabilities

75

EF Tests for Attention, Shifting, Inhibition

- Test of Everyday Attention-Children (TEA-CH)
  - 6-16; 9 subtests; takes long time to give, but good info
  - Auditory + visual attn; EF skills—inhibition, switching, planning
- Children's Color Trails Test 1 & 2
  - 8-16; lots of interpretation for clinical populations
  - Subtle alternating/sustained attn, Shifting, Monitoring, Regulation
- Stroop Color & Word Test-Children
  - 5-14; lots of interpretation for clinical populations
  - Inhibition, shifting/perseveration, sustained attention
  - Interference scores indicate degree of inhibitory control

76

Standardized Tests for Higher Level Language & Reasoning

- Test of Adolescent and Adult Language, 4th Edition (TOAL-4)
  - Ages
  - Subtests
- Functional Assessment of Verbal Reasoning & Executive Strategies – Student (S-FAVRES)
  - Ages 12 – 19 (Adult Version 18+)
  - 4 functional, complex tasks
  - Scores for Rationale, Accuracy, Time; Verbal Reasoning
  - Indirectly analyze complex language & EF use
- Test of Verbal Conceptualization and Fluency (TVCF)
  - Ages 8 – 89; 4 subtests
  - Categorical Fluency, Classification, Letter Naming, Trails C

77

Standardized EF Questionnaires:

- Behavioral Rating Inventory of Executive Functions (BRIEF-2)
  - Rate degree of problems in use of EFs in home, school
  - EF scales and 2 EF indices, + 1 global index
  - Ages 5-18;
  - Self report, ages 11-18; Parent & Teacher reports
- BRIEF – Preschool (BRIEF-P)
  - Ages 2-5; Parent & Teacher reports
- BRIEF – Adult (BRIEF-A)
  - Ages 18+; Self, Informant reports

78

EF Interviews & Diagnostic Questions

- Executive Skills Questionnaire
  - Dawson & Guare, 2009; 2010
  - Parent & Student Forms; Rate 1-5 for degree of problem
- Sample Interviews for Executive Functioning
  - Fahy & Richard, 2017
  - For parent, teacher, student
  - Organized by EF behaviors observed in home, school
- Executive Functioning Semistructured Interview
  - Kaufman, 2010
  - Parent, teacher, student
  - Organized by EF area

Or make up your own questions!

79

Sample Dx Questions: Attention & Inhibition

- Independently attend to task, chores, self-care?
- Focus on gait and posture, if navigationally demanding?
- Independently maintain attention over time? How long?
- Tune out distraction?
- Deliberately shift attention between parts, tasks, interruptions?
- Require prompts or redirections?
- Control impulsive behaviors?
- Require prompts to stop, disengage, wait, or delay?
- Inhibit long enough to consider plan or options?
- Delay X, in order to achieve better outcome later?

80

Sample Dx Questions: Goal-Determination/Planning

- Demonstrate adequate, accurate self-appraisal?
- Select achievable, relevant goals and behaviors?
- Recognize need for assistance or revision?
- Walk purposefully, with deliberate end-goal/destination? Or lose way?
- Able to plan navigational moves in demanding environment?
- Recognize implied, subtle, hidden expectations?
- Read nonverbal, social clues?
- Verbalize relevant, strategic plans and plan-steps?
- Determine and predict outcomes, consequences?
- Select 'best' options, plans, or strategies? Or, make inefficient choices?
- Identify and locate necessary materials or items?

81

Sample Dx Questions: Initiation & Shifting ???

- Independently initiate and persist with efforts?
- Internally motivated, with self-driven efforts?
- Independently request assistance or help getting started?
- Accurate notice passage of time while working?
- Accurately estimate how long a task should/will take?
- Shift between efforts, strategies, tasks, or behaviors?
- Adapt to change?
- Apply efforts to new or unfamiliar demands?
- Develop alternative approaches when necessary?
- Think flexibly to meet demands?

82

Sample Dx Questions: Monitoring & Regulating

???

- Adequately and accurately evaluate quality of work?
- Notice unintentional errors in efforts?
- Notice, in real-time, others' discomfort with own behavior?
- Aware of need for support?
- Have knowledge of own EF system?
- Disrupt ineffective or inappropriate efforts in real time?
- Inhibit own desires for situational demands?
- Routinely monitor, evaluate, fix, or correct efforts?
- Fix problems once pointed out to her/him?

83

Clinical Analysis of Novel or Complex Problem Solving

- Provides more ecologically valid information
- Can offer immediate insight
- But depends upon ability to develop novel/complex tasks
- And depends upon ability to capture, label, describe EF profile
- Try, at least, to do in conjunction with interviews, record review, classroom observation, standardized questionnaires

Non-standardized Functional EF Task

84

Clinical Analysis of Functional Problem Solving Tasks

- Devise a functional, hands-on, novel task:
  - Age appropriate and inherently motivating
  - Challenging, yet achievable
  - Novel—not a routine!!
  - Must require generation of plans, solutions
  - Must require self-directed initiation, shifting
  - Must require independent attention, monitoring, and evaluation of own work

85

EF Observation Forms

- Executive Skills Rubric
  - Dawson & Guare, 2010; adapted Cape Elizabeth HS, Cape Eliz, ME
  - Parent & student forms; 33 questions & 11 EF skills
  - Rating from 1-5, depending upon degree of problem
- Executive Function Observational Worksheet
  - Fahy & Richard, 2017
  - 8 EF skills areas to observe during functional task completion
  - Consistency & independence of EF skill use
- Executive Function Student Observation Form
  - McCloskey, 2007
  - 23 EF areas to observe in classroom via self-regulation
  - Observe degree to which teacher fosters/externally guides EFs

86

Get Specific

- Is there a diagnosis, and what is it?
- Do I evaluate language, social-cognition, or EFs?
- How will I capture this child's EF profile?
- What kinds of assessment tools should I use?
- Is language sufficient to assist in planning?
- Are social-cognitive interpretation skills accurate?
- Is self-awareness reliable?
- Who wants what from this evaluation?

87

Complications of Treating EDF

Development of EF skills is protracted process

Individual EFs come online, develop, mature at different trajectories

Individual EFs are distinct constructs, yet inter-related

Some EFs are dependent upon sophisticated language skills

Others dependent upon sophisticated social interpretation

Countless underlying etiologies disrupt development

Difficult to evaluate quickly, efficiently

Evidence-based practice still catching up for this demographic

What looks 'ok' when younger, is clearly a problem when older

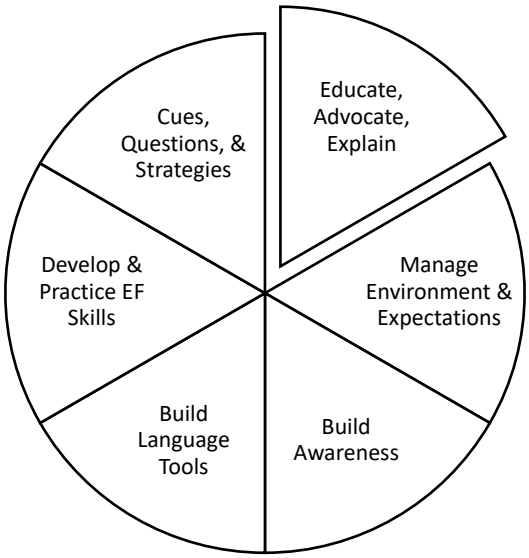
EF deficits manifest differently in different environments

No one answer to treatment or fostering development

Intervention is a years-long process

88

WHAT TO DO?



89

References

- Anderson, P. (2002). Assessment and Development of Executive Function (EF) During Childhood. Child Neuropsychology, 8(2), 71 – 82.
- Berninger, V., Abbott, R., Cook, C., & Nagy, W. (2017). Relationships of Attention and Executive Functions to Oral Language, Reading, and Writing Skills and Systems in Middle Childhood and Early Adolescence. J. of Learning Disabilities, 50(4), 434 – 449.
- Best, J. & Miller, P. (2010). A Developmental Perspective on Executive Function. Child Development, 81(6), 1641 – 1660.
- Dawson, P. & Guare, R. (2018). Executive Skills in Children and Adolescents: A Practical Guide to Assessment and Intervention, 3rd Ed. New York, NY: The Guilford Press.
- Fahy, J. (2014). Assessment of Executive Functions in School-Aged Children: Challenges and Solutions for the SLP. ASHA SIG 16 Perspectives on School-Based Issues, 15, 151-163.
- Fahy, J. & Richard, G. (2017). The Source: Development of Executive Functions, 2nd, Ed. Austin, TX: Pro Ed, Inc.
- Gooch, D., Thompson, P., Nash, H., Snowling, M., & Hulme, C. (2015). The development of executive function and language skills in the early school years. J of Child Psychology and Psychiatry, 57(2), 180 – 187.
- Howard, S. & Melhuish, E. (2017). An early years toolbox for assessing Early Executive Function, Language, Self-Regulation, and Social Development: Validity, Reliability, and Preliminary Norms. J. of Psychoeducational Assessment, 35(3), 255 – 275.

90

CONTINUED

References

- Jurado & Rosselli, 2007. The Elusive Nature of Executive Functions: A Review of our Current Understanding. Neuropsychology Review, 17(3), 213 – 233.
- Kaushanskaya, M., Park, J., Gangopadhyay, I., Davidson, M., & Weismera, S. (2017). The Relationship between Executive Functions and Language Abilities in Children: A Latent Variables Approach. J. of Speech, Language, & Hearing Research, 60, 912 – 923.
- Kaufman, C. (2010). Executive Function in the Classroom: Practical Strategies for Improving Performance and Enhancing Skills for All Students. Baltimore, MD: Paul H. Brookes Publishing Co.
- Kennedy, M. (2017). Coaching College Students with Executive Function Problems. New York, NY: The Guilford Press.
- Manchester, D., Priestley, N., Jackson, H. (2004). The Assessment of Executive Functions: Coming out of the office. Brain Injury, 18 (11), 1067 – 1081.
- Meltzer, L. (ed.) (2018). Executive Function in Education: From Theory to Practice, 2nd Edition. New York, NY: The Guilford Press.
- Meltzer, L. (2010). Promoting Executive Function in the Classroom. New York, NY: The Guilford Press.
- Pauls, L. & Archibald, L. (2016). Executive Function in Children with Specific Language Impairment: A Meta-Analysis. J. of Speech, Language, & Hearing Research, 59, 1074 – 1086.
- Skogli, E., Andersen, P., Hovik, K., & Oie, M. (2017). Development of Hot and Cold Executive Function in Boys and Girls with ADHD: A 2 year Longitudinal Study. Journal of Attention Disorders, 21(4),305-31 5.

91