


Pearson
Executive Functions and ADHD: Theory Underlying the New Brown Executive Functions/Attention Scales



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Welcome Everybody!



10 Assumptions About ADHD Underlying the Brown Executive Function/Attention Scales

Assumption #1



All the executive function impairments associated with ADHD are problems everyone has sometimes, those with ADHD simply have much more chronic and impairing difficulty with these problems.



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Assumption #2



While it is true that some children and adults with ADHD have significant problems with hyperactive and excessively impulsive behavior, many with ADHD have never had any significant behavior problems and have never been hyperactive.



1

Assumption #3



Research has demonstrated significant differences in brain development and brain connectivity of children and adults with ADHD compared to typically developing individuals of similar age. While much of brain development is similar, some specific areas of brain that are important for self-management tend to mature about 3 to 5 years later in those with ADHD and for some these problems persist for much of their life.



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Assumption #4



It was once thought that a child with ADHD would certainly outgrow the disorder sometime before reaching the age of about 14 years, however, longitudinal studies have shown that about 70% of those who have ADHD in childhood will continue to have some ADHD impairments at least into late adolescence and many into adulthood.



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Assumption #5



Regardless of the age at which ADHD becomes apparent, preschool, elementary, middle or high school, or college and adulthood, several studies have also shown that those with later onset of ADHD can be as fully impaired as those with earlier onset.



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Assumption #6



ADHD has nothing to do with how intelligent a person is. Some extremely bright and accomplished people suffer from ADHD, despite high IQ. Studies have shown that ADHD is found in persons across the full range of intellectual abilities.



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Assumption #7



Emotions play two important roles in ADHD, neither of which is reflected in current diagnostic criteria. Conscious and unconscious emotions play a critical role in problems of motivation and self-regulation that are pervasive in ADHD. Also, many with ADHD have chronic difficulty in recognizing and managing expression of their emotions.



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Assumption #8



ADHD is not just one or two specific symptoms. It is a complex syndrome, a cluster of impairments that often appear together, though some aspects of the disorder may be more or less prominent in any particular person.



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Assumption #9



There are many differences among various persons with ADHD, even those of similar age. They are not all exactly alike in either their strengths or their difficulties.



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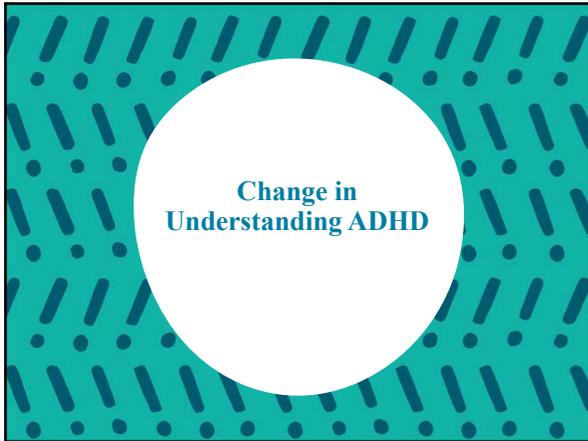
Assumption #10



Most children and adults who suffer from ADHD also have difficulties from one or more co-occurring disorders at some point in their lifetime. Incidences of specific learning disorders, anxiety and mood disorders, sleep disorders, obsessive-compulsive disorders, substance use disorders, and autism spectrum disorders are considerably higher among those with ADHD than in the general population.



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Attention Deficit Hyperactivity Disorder



Old Understanding Of ADHD:

"disruptive behavior disorder of childhood"

New Understanding Of ADHD:

Developmental impairments of brain's self-management system, its *"executive functions"*



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Executive Functions

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EXECUTIVE FUNCTIONS AT TREATMENT
SCALES.

- Wide range of central control processes of the brain
- Connect, prioritize, and integrate cognitive functions—moment by moment
- Like conductor of a symphony orchestra

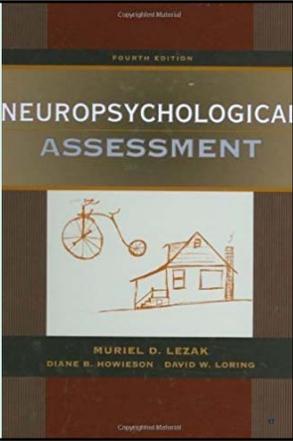
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Executive Functions:
“Will you do it and, if so, how and when?”
(Lezak, 2004)

Will you do it?
Motivation/Activation

How will you do it?
Planning/Organizing

When?
Timing/Remembering



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Executive Functions Operate in Dynamic, Integrated Ways

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For Example EF for “Focus”

- **Does not** mean
–as in holding the camera still to take a photo of an unmoving object
- **Does** mean
–as in focusing on the task of driving a car

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**Executive Functions:
Development and Demands**

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- EF capacity develops through childhood, into adolescence, and beyond; **it is not fully present in early childhood**
- Environmental **demands for EF increase with age**, from preschool through adulthood
- EF impairments **often are not noticeable by age 12!**

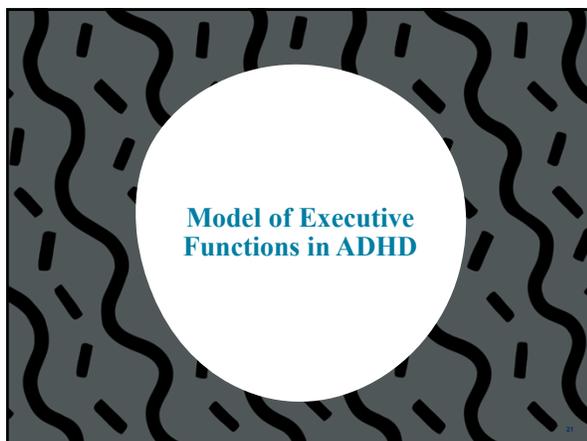
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**When Are ADHD
Impairments Noticeable**

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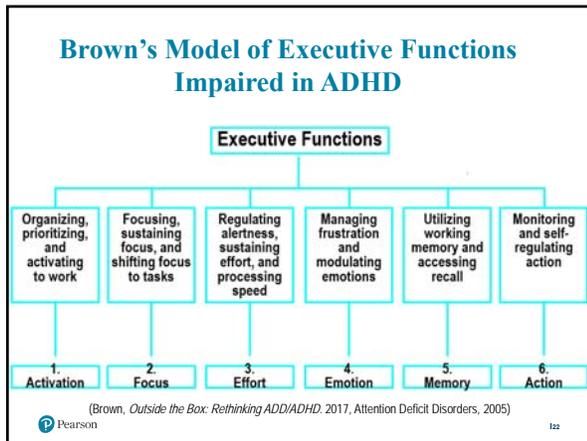
- Some are obvious very early and are noticeable in **preschool years**
- Some are not noticeable until middle elementary or **middle school**
- Some are not apparent until child leaves home to go to **college or later**

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Model of Executive Functions in ADHD

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Brown's Model of Executive Functions Impaired in ADHD

Symptom Characteristics

- Dimensional, not "all-or-nothing"
 - Everyone sometimes has some impairments in these functions; in ADHD, it is a chronic, severe impairment
- Situational variability: "If I'm interested"
 - Most persons with ADHD have a few activities where ADHD impairments are absent

ADHD looks like a willpower problem, but it isn't!

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1. Organize, Prioritize, and Activate

- Difficulty organizing tasks, materials
- Difficulty estimating time, prioritizing tasks
- Trouble getting started on work

(Brown, *Outside the Box: Rethinking ADD/ADHD*. 2017, Attention Deficit Disorders, 2005)

BROWN EXECUTIVE FUNCTIONS ATTENTION SCALES

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2. Focus, Shift, and Sustain Attention



- Loses focus when trying to listen or plan
- Easily distracted—internal/external
- Forgets what was read, needs to re-read

(Brown, *Outside the Box: Rethinking ADD/ADHD*. 2017, Attention Deficit Disorders, 2005)



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3. Regulating Alertness, Effort, and Processing Speed



- Difficulty regulating sleep and alertness
- Quickly loses interest in task, especially longer projects; doesn't sustain effort
- Difficult to complete task on time, especially in writing—"slow modem"

(Brown, *Outside the Box: Rethinking ADD/ADHD*. 2017, Attention Deficit Disorders, 2005)



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4. Manage Frustration, Modulate Emotion



(Not included in DSM-V criteria)

- Emotions impact thoughts, actions too much
- Frustration, irritations, hurts, desires, worries, etc., experienced "like computer virus"
- "Can't put it to the back of my mind"

(Brown, *Outside the Box: Rethinking ADD/ADHD*. 2017, Attention Deficit Disorders, 2005)



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5. Utilize Working Memory, Access Recall 

- Difficulty holding one or several things “on line” while attending to other tasks
- Difficulty “remembering to remember”
- Inadequate “search engine” for activating stored memories, integrating these with current info to guide current thoughts and actions

(Brown, *Outside the Box: Rethinking ADD/ADHD*. 2017, Attention Deficit Disorders, 2005)

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6. Monitor and Self-Regulate Action 

(Not just hyperactivity/impulsive behavior)

- Difficulty controlling actions, slowing self and/or speeding up as needed for tasks
- Doesn't size up ongoing situations carefully
- Hard to monitor and modify own actions to fit situation/aims

(Brown, *Outside the Box: Rethinking ADD/ADHD*. 2017, Attention Deficit Disorders, 2005)

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The Central Mystery of ADHD 

Situational Variability of Symptoms

- *Why focus for this, but not that?*
“If it really interests me” (attraction)
- *Why focus then, but not now?*
If I feel the gun to my head” (fear)
- *Why is motivation in ADHD so variable in one situation to another?*

(Brown, *Outside the Box: Rethinking ADD/ADHD*. 2017)

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Two Hypotheses on the Central Mystery of ADHD

Will Power

vs

Erectile Dysfunction of the Mind

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How does brain determine motivation to ignore or attend, to do or not do now?



- **Motivation** is not a unified variable; it is not just “gas in the tank” It is **idiosyncratic and specific** to particular tasks and settings.
- Each perception, thought or task is instantly screened by the brain’s “google search” that pulls up relevant, unconscious memories throughout cortex; these compete to activate approach, avoidance and/or disinterest

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How ADHD Can Affect Emotions:



Reactions to small frustrations or transient wishes can gobble up all the space in their mind—like a computer virus

- frustration/anger
- hurt feelings
- “got to have it now”
- “what if?”

→ Emotional flooding

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ADHD “Hyperfocus” Can Bias and Impair Motivation



- Focused too intensely on one goal or task, they may forget other goals they have or how actions of the moment may affect their bigger picture
- Like one who is watching a basketball game through a telescope, they may miss other relevant aspects of the situation
- Living too much in the moment, eg. want to sleep longer in am, may forget boss' warning about excessive lateness

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Flooding With One Emotion



- While flooded with one emotion, persons with ADHD tend to forget about other relevant facts or emotions,
- May forget their love & wish to protect the person—friend, parent, child, co-worker who frustrated or angered them
- And say or do things that are too hurtful

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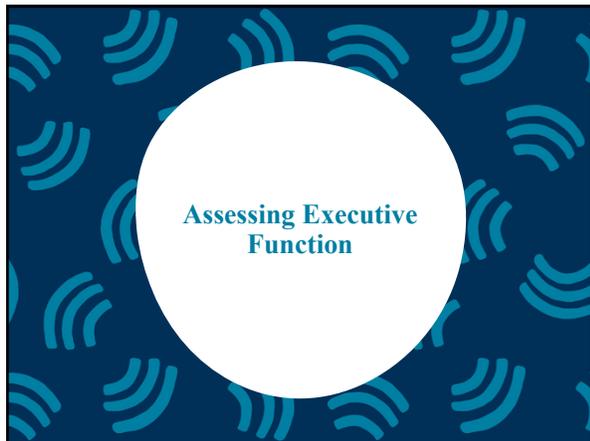
ADHD Working Memory Impairments Can Bias and Impair Motivation



- Is important for holding in mind multiple thoughts and emotions, relevant to any specific situation or task
- Impairment in working memory is a key aspect of ADHD
- Often people with ADHD are unable to keep multiple emotions in mind at same time so they can prioritize

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How Can Executive Function Impairments of ADHD Be Assessed?

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- When ADHD was seen as just a disruptive behavior disorder in childhood, diagnosis was based on observing overt behavior
- Self/collateral report of performance on **complex, everyday, self-managed tasks** in clinical interviews and normed rating scales is a more sensitive **diagnostic indicator** of EF impairments than observation or neuropsych "tests of EF".

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Executive Functions operate in dynamic, integrated ways

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- Most tasks requiring EF require integrated use of multiple aspects of EF
- EF usually operate without conscious deliberation, with automaticity, as in driving a car.
- Measured not with neuropsych tests, but with clinical assessment of functioning in daily life across time.

(Brown, Outside the Box: Rethinking ADD/ADHD, 2017: Intl. J. Disability, Devel & Ed 2006)

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Brown EF/A Scales 

- Fully updated norms (for ages 3 through adults)
- New and updated test items that improve clarity and clinical relevance
- Based on Dr. Brown's six cluster model of executive functions
- New parent form available for adolescents
- Both gender-specific and combined-gender norms available for all age groups
- Includes DSM-5 symptoms of ADHD and more
- Digital administration and scoring available with Q-global® web based system

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What makes Brown EF/A Scales different? 

Items are more specific and contextual: Patients with ADHD experience much situational variability with ability to focus on specific activities which hold strong interest for them, but more limited ability to focus on less interesting tasks, even when they may be important. The Brown EF/A scales include items that ask about difficulties encountered in specific contexts, e.g. difficulty remembering what has been read (when reading is assigned, not self-selected texts).

Multiple Perspective Assessment: The Brown EF/A scales will provide a comprehensive evaluation of an individual's ADHD symptoms by assessing functioning using multiple perspectives: self-perspective, teacher's perspective and parents' perspective.

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What makes Brown EF/A Scales different? 

Focus on severity as opposed to frequency: Unlike other instruments, items on the Brown EF/A scales focus on severity of specific problems rather than frequency. This allow examinees to report more accurately how much difficulty they experience with each specific symptom.

Includes DSM-5 symptoms of ADHD and more: In addition to diagnostic criteria for ADHD defined in DSM-5, the Brown EF/A scales also assess other important aspects of executive function impairments found in persons with ADHD, but not yet included in DSM-5 diagnostic criteria for ADD/ADHD.

Based on Dr. Brown's model of Executive Functions: The Brown EF/A scales are based on Dr. Brown's six cluster model of executive functions that has been well recognized and explained in books and articles for more than a decade.

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Available Forms 

- 3 - 7 years **Parent, Teacher**
- 8- 12 yrs. **Parent, Teacher, Self-Report**
- 13 – 18 yrs. **Self-Report, Parent (new)**
- 19+ years **Self-Report**

(can be completed at home then reviewed in session, or administered orally by examiner)

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Brown Scales Assess for Situational Variability of EF/A impairments 

- Differentiates between tasks, e.g. reading, with strong or minimal interest for the individual
- Inquires about **“when** writing or talking...”
- Restless, fidgety **when** have to wait
- Hard for me to stop doing things I like to do, **even when** I know I should

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Dimensions for Item Responses 

Most other ADHD or EF rating scales ask frequency of behaviors related to ADHD in terms of “how often ?” But “frequency” does not always indicate how much that problem actually impairs functioning.

Brown EF/A scales ask **how big** a problem?

0. **No** problem
1. **Little** problem
2. **Medium** problem
3. **Big** problem

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Scoring and Report of the Brown EF/A Scales -3 options

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SCALES

Q-global® Web-based Administration, Scoring, and Reporting - Administer assessments using our digital Q-global platform. It enables you to quickly assess and efficiently organize examinee information, generate scores, and produce accurate comprehensive reports all via the Web.

Paper Administration, Q-global Web-based Scoring and Reporting - Administer assessments using record forms and score them using our digital Q-global platform. It enables you to quickly assess and efficiently organize examinee information, generate scores, and produce accurate comprehensive reports all via the Web.

Paper Administration and Manual Scoring - Administer assessments using record forms and score them yourself with answer sheets and scoring rules mentioned in the manual.

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Uses for Brown EF/A Scales

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- Screener to identify individuals who should receive a full evaluation for ADHD
- Use with clinical interview for evaluation of possible ADHD and related problems
- Tool for monitoring response to treatment

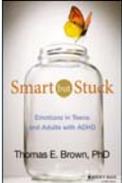
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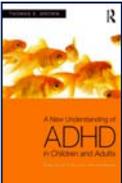
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