Disclosures

Dr. Ramsay

- Speaker honoraria (Pennsylvania Psychological Association, 1199SEIU Training and Employment Funds)
- Book royalties (Routledge, American Psychological Association)
- Honoraria as reviewer of book proposals (Routledge, American Psychological Association)
- Honoraria for chapter contributions to edited books
- Research Consultant (Shire Pharmaceuticals)
- Faculty, CME Institute of Physicians Postgraduate Press (Funded in part by Shire grant)

Dr. Rostain

- Speaker honoraria (WebMD, Medscape)
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Outline

1. Introduction (our approach to our work)
2. ADHD as a Reward Deficiency / Motivational Deficit Syndrome
3. Pharmacotherapy of RDS symptoms
4. Psychosocial interventions for ADHD
Introduction

• History of the Penn Adult ADHD Treatment and Research Program

• Current approach to evaluation and treatment

• Summary of treatment studies

• Penn CBT/ADHD model
Psychosocial Treatment: Peer Reviewed Studies (N=23)

- Wiggins et al. (1999)
- Wilens et al. (1999)
- Hesslinger et al. (2002)
- Philipsen et al. (2007, under review*)
- Stevenson et al. (2002*, 2003*)
- Safren et al. (2005*, 2010*)
- Weiss et al. (2006, 2012*)
- Rostain & Ramsay (2006)
- Ramsay & Rostain (2011, under review)
- Solanto et al. (2008, 2010*)
- Virta et al. (2008, 2010*);
- Salakari et al. (2010)
- Bramham et al. (2009)
- Emilsson et al. (2011*)
- Hirvikoski et al. (2011*)
- Emmerik-van Oortmerssen et al. (2013, in progress)

Year* = RCT
Individualized Approach to CBT

- Case conceptualization - individually focused approach
- Approx. 20 sessions over 6 months

  - Getting started (1 + 2) – “start small,” prioritize goals/skills, motivation
  - Early sessions (3 – 6) – education, skill-based HW, formulate
  - Middle sessions (7 – 15) – continue to develop/implement coping skills, comorbidities, cog modification
  - Later sessions (16 – 20) – maintain and generalize skills, relapse prevention

ADHD as a Reward Deficiency Syndrome

UNDERLYING MECHANISMS AND CONCEPTUALIZATION
Postulated Mechanisms of ADHD

- Inhibition deficit (Barkley)
- Cognitive-energetic model (Sergeant)
- Executive control deficit (Brown)
- Working memory deficit (Kofler et al)
- Dopamine transfer deficit (Tripp, Wickens)
- Prefrontal cortex dysfunction (Arnsten, Rubia)
- Reward deficiency syndrome (Blum et al)
Inhibition

Motor Control

Sensing to the Self
Self-Speech
Emotion to the Self
Play to the Self

[Insufficient Inhibitory Control]
[Barkley, 1997]
Cognitive-Energetic Model
[Sergeant, 2000]
Executive Function Deficit Model
[Brown, 1996]

The Brain’s Executive Functions

- Reward Dependent Functions

ACTIVATION
- Organizing
- Prioritizing
- Getting to work

FOCUS
- Tuning in
- Sustaining focus
- Shifting attention

EFFORT
- Regulating alertness
- Sustaining effort
- Adjusting processing speed

EMOTIONS
- Managing frustration
- Modulating emotions

MEMORY
- Holding on and working with information
- Retrieving memories

ACTION
- Monitoring and regulating one’s actions
Working memory deficit
(Castellanos, Tannock, 2002)
Dopamine transfer deficit (DTD)
(Tripp, Wickens, 2008)
DTD and the Neurobiology of ADHD

ADHD

Symptoms
- Predominantly inattentive
- Combined
- Predominantly hyperactive-impulsive

Basic processes
- Executive function
  - Working memory
  - Behavioral inhibition
- Motivation
  - Delay aversion
  - Reinforcement

Neural Mechanisms
- PFC
- Basal ganglia
- Noradrenalin
- Dopamine
- Cerebellum
- Serotonin

Genes
- DBH
- HTR1B
- DAT1
- D4
- D5
- SER
- T
- SNAP-25
Regulation of Attention and Emotion
Reward Deficiency Syndrome

[Blum]

• Reward Deficiency syndrome refers to the breakdown of the reward cascade, and resultant aberrant conduct, due to genetic and environmental influences.

• RDS is a DNA-related gene and chromosome type of syndrome that interferes with the usual achievement of human physiological drives such as food, water, and sexual reproduction.

• The A1 (minor) allele of the D2 dopamine receptor (DRD2) gene has been shown to be associated with alcoholism, particularly its severe form, as well as with smoking, obesity, and other addictive behaviors.
Reward Deficiency Syndrome
[Blum, 2000]

Expressions of Reward Deficiency Syndrome

- Addictive behavior
  - Severe Alcoholism
  - Polysubstance abuse
  - Smoking
  - Obesity

- Impulsive behavior
  - ADD
  - Tourette's Synd.
  - Autism

- Compulsive behavior
  - Aberrant sex behav.
  - Pathol. gambling
  - Aggressive behavior

- Personality disorder
  - Conduct disorder
  - Antisocial personality
Evidence of RDS in ADHD

• Genetics
  – A1 allele of D2 receptor is overrepresented in ADHD pts
  – Families with very high A1 allele penetrance demonstrate high co-occurrence of addictions, hyperactivity, TS, autism, aggression and personality disorders
  – Newer findings: DRD4, DRD5, DAT1m DBH genes
  – Dopaminergic polymorphisms linked to TOVA scores and P300 latency

• Clinical correlates of RDS in ADHD
  –Impulsivity – low frustration tolerance, emotional impulsivity
  – Trouble filtering stimuli – sense of being “overloaded”
  – Crisis orientation – heightened state of arousal
  – Addictive behaviors – self-medication hypothesis
Dopamine Pathways

- mesolimbic tract
- nigrostriatal tract
- mesocortical tract
- tuberoinfundibular tract
- n. accumbens
- VTA
These positron emission tomography (PET) scans show that patients with ADHD had lower levels of dopamine transporters in the nucleus accumbens, a part of the brain's reward center, than control subjects.
The regions of interest for the midbrain are obtained in several planes, and the shadow is projected to the axial image shown in the figure, which explains why the third ventricle is covered by the region. The x coordinate maps the left-right position; the y coordinate, the anterior-posterior position; and the z coordinate, the superior-inferior position.
A. Regions showed significantly lower dopamine D$_2$/D$_3$ receptor availability in participants with attention-deficit/hyperactivity disorder (ADHD) than in controls (obtained from $^{11}$C]raclopride images). B. Regions showed significantly lower dopamine transporter availability in the participants with ADHD than in controls (obtained from $^{11}$C]cocaine images). Significance corresponds to $P < 100$ voxels. The yellow regions identify the areas in the brain for which the measures differed between controls and participants with ADHD. The location of the region that differed was similar for the dopamine D$_2$/D$_3$ receptor and for the dopamine transporter and included the locations of the left ventral striatum (including accumbens and ventral caudate), left midbrain, and left hypothalamus. The z coordinate maps the superior-inferior position.

Dopamine: Motivational Deficit

– Dopamine binding lower for ADHD adults when compared with controls


– Correlation of Dopamine receptors and DAT and achievement scale of MPQ (trait motivation)

– MPQ lower among ADHD adults vs controls

– MPQ correlate with Dopamine among ADHD; MPQ inversely correlated with ADHD measures

Heuristic Implications of RDS

• Links to other explanatory models of ADHD
  – Inhibition deficit - constitutive feature
  – Cognitive-energetic model – motivational deficits
  – Executive control deficit - “activation” and “sustaining effort”
  – Working memory deficit - shortened delay gradient
  – Dopamine transfer deficit - underlying cause of RDS
  – Prefrontal cortex dysfunction - self-regulation deficits

• Links among impulsivity, compulsivity, behavioral style
Heuristic Implications of RDS

• Links to co-morbidity
  – Addictions
  – Mood disorders
  – Anxiety disorders
  – Tourette syndrome

• Clinically relevant constructs
  – Reinforcement
  – Salience
  – Efficiency
  – Motivational state
  – Affect regulation
Clinical Implications of RDS

• Motivational deficits commonly encountered
  – Trouble activating, getting started
  – Easy boredom / trouble sustaining attention
  – Sense of “being lazy” or insufficiently disciplined

• ADHD individuals do best with salient (interesting) tasks and frequent rewards

• Higher risk of developing addictive behaviors
  – Intense novelty seeking
  – Chemical dependency
  – Non-chemical addictions: internet use, gaming, gambling
Clinical Implications of RDS

• Targets of treatment
  – Deficient reward states / motivational insufficiency
  – Compensatory strategies
    • Reward (pleasure) seeking
    • Avoidance of boredom / intolerance of tedium
    • Anxious responses to challenges (distress rather than stress)

• Intervention principles
  – Integrative care
  – Psychoeducation: comprehensive model of ADHD
  – Emphasis on pragmatic goals and implementation strategies
  – Focus on “engagement” in tasks, roles and endeavors
SEMINAR TODAY
MOTIVATING YOUR STAFF

FRANKLY, I WAS EXPECTING
SOMETHING A BIT MORE SOPHISTICATED...
Treatments for Adult ADHD

**Evidence based**
- Pharmacotherapy
- Psychosocial-CBT
- Academic support and accommodations

**Promising but not proven**
- Workplace support and career counseling
- Relationship treatments
- Neurofeedback
- Neurocognitive training
- Mindfulness meditation, yoga
- Exercise

Treatment guidelines for Adults with ADHD

• A typical sequence of interventions:
  – Education
  – Medication Trial
  – Efficacy/Safety

  
  CADDRA, 2007

• Drug treatment is first-line treatment for adults with ADHD with either moderate or severe levels of impairment

  NICE, 2008

• Drug prescribing in adults is supported by British Association Psychopharmacology guidelines

  BAP, 2007
ADHD as a Reward Deficiency Syndrome

INTEGRATIVE TREATMENT MODEL FOR ADULT ADHD: PHARMACOTHERAPY
“I medicate first and ask questions later.”
Catecholamines and Brain Activity

DLPFC, dorsolateral prefrontal cortex; VLPFC, left ventrolateral prefrontal cortex; BS-ACh, pedunculopontine/laterodorsal tegmental nuclei; VTA/SN, ventral tegmental area-substantia nigra; NBM, nucleus basalis magnocellularis; LC, locus coeruleus; DA, dopamine; ACh, acetylcholine; NE, norepinephrine; NBM, nucleus basalis magnocellularis; VTA, ventral tegmental area; SN, substantia nigra.
Principles of Pharmacotherapy

- Integrate medication with other modalities
- Define target symptoms, realistic goals / Engage patient in process
- Choice of medication
  - Evidence base
  - Mechanism of action
  - Duration of effect
- Aim for lowest effective dose / Inverted U curve of effects
- Monitor
  - Adherence
  - Efficacy
  - Tolerability
- Modify regimen as indicated
  - Salience, reinforcement schedules, variations in effect
  - Schedule, dosing, desired clinical effects, side effects
The Prefrontal Cortex Requires A Proper Level of Catecholamines for Optimal Function

Guided attention and responses
Focused, organized and flexible
(e.g. optimally treated ADHD)

NE α2A
Moderate D1

Too little
α2A/D1

NE α1, β1
Excess D1

Misguided attention/responses
Mental inflexibility, stimulus bound
(e.g. Excessive dose of stimulant)

Unguided attention/responses
Distracted, poor impulse control
(e.g. Untreated ADHD)

Increasing levels of catecholamine release

drowsy  alert  stressed

First line pharmacotherapy

- Psychostimulants first line agents
  - *Multiple FDA approved agents (adult)*
- Long-acting preparations preferable
  - compliance, treat through the day
  - minimize abuse
- May be useful to orient according to weight
  - E.g., 1-1.5 mg/kg/day MPH ~ 70-100mg/day;
  - 0.5-1.0 mg/kg/day MAS

In part, Nutt, 2007; CADDRA, 2007; AACAP 2007
“true optimal treatment occurs when the patient’s level of impairment is brought within the normal range and remission of symptoms is achieved if possible”

CADDRA, 2007

“optimal outcome is the dose which leads to best functional outcome”

BAP/Nutt 2007
Methylphenidate Activates Dorsal Anterior Midcingulate Cortex

- fMRI at baseline and again at week 6
- OROS MPH group showed higher daMCC activation at 6 weeks vs placebo
- N=21 adults with ADHD; dosing to 1.3 mg/kg/day OROS MPH or placebo

PET Brain Images Showing the Effects of Intravenous Methylphenidate on Extracellular Dopamine in the Striatum and on Regional Glucose Metabolism in Orbitofrontal Cortex

[Kalivas & Volkow, 2007]
Evidence That Methylphenidate Enhances the Saliency of a Mathematical Task by Increasing Dopamine in the Human Brain  [Volkow et al, 2004]
Long-Term Stimulant Treatment Affects Brain Dopamine Transporter Level in Patients with ADHD [Wang et al 2013]
Goal of Treatment:  *Resilience*

“I’m going to graduate on time, no matter how long it takes me.”

Anonymous college student
The PENN CBT-ADHD Model illustrates the interplay between environmental context, developmental experiences, and ADHD neurobiology, leading to chronic difficulties, under-developed coping skills, and impairments. This process is further influenced by co-existing conditions, schema/core beliefs, compensatory strategies, current situation, cognitions, emotions, and behaviors.
Implementation Strategies
Overview

**Implementation vs. Goal strategies**

[Gawrilow & Gollwitzer, 2008]

- Identify specific “pivotal situations”
- Focus on preparing for change at these times
- Set up environment to be cue for desired behavior
- Complementary with other self-regulation strategies, other CBT interventions

**Analysis of various factors**

- Facilitate shift from “off task” to “on task”
- Anticipate barriers
- Acceptance of discomfort
- Rehearsal, imagery, cognitions
- Stimulus control
- Smallest behavioral engagement
ADHD as a Reward Deficiency Syndrome

INTEGRATIVE TREATMENT MODEL FOR ADULT ADHD: CBT & MOTIVATIONAL ENHANCEMENT
ADHD as a Reward Deficiency Syndrome

FUNCTIONAL IMPAIRMENTS
Life Outcomes: Adult ADHD

- Workplace problems
- Relationship problems
- Lower educational attainment
- Employment problems
- Lower self-esteem
- Lower social functioning
- Lower satisfaction in life domains

- Physical health issues
- Legal issues
- Lower SES
- Psychiatric comorbidity
- Substance use disorders
- Risk for suicide (SUD + psychiatric)

# Impairments in 30-Day Functioning Associated With Adult ADHD

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<tr>
<td>High time out of role</td>
<td>15.8</td>
<td>6.0</td>
<td>2.9*</td>
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<tr>
<td>Low role functioning</td>
<td>15.0</td>
<td>6.1</td>
<td>2.7*</td>
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<tr>
<td>Low social functioning</td>
<td>18.7</td>
<td>5.9</td>
<td>3.7*</td>
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<tr>
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<td>23.3</td>
<td>5.5</td>
<td>5.2*</td>
</tr>
<tr>
<td>Low mobility</td>
<td>8.3</td>
<td>4.7</td>
<td>1.8</td>
</tr>
<tr>
<td>Low self-care</td>
<td>6.1</td>
<td>4.0</td>
<td>1.6</td>
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</table>

*p=.05

Adolescent Predictors of Functional Outcome in Adult ADHD

- Less likely than peers to do each activity
  - Cultural/educational activities outside of school: ADHD (v. non) 55% (v. 39%)*
  - Extracurricular activities: 45% (v. 32%)**
  - Dating: 43% (v. 24%)**
  - Sports: 39% (v. 29%)*
  - Free time with friends: 27% (v. 15%)**
  - Free time with family: 27% (v. 12%)**

* $p \leq 0.01$
** $p \leq 0.001$

“Perseverance is not a long race; it is many short races one after another.”

Walter Elliott
Motivational Enhancement

• Drawn from many interventions focused on “self-regulation” and “implementation”

• Motivational Enhancement Therapy
  – Planned, directed, patient-centered
  – Develop discrepancy b/w behaviors and goals
    • Miller, WR (2000) In Approaches to Drug Abuse Counseling (pp. 99-105). NIDA.

• Integrated into CBT for Teen ADHD & SUD
Motivational Enhancement (2)

• “Grit” = “(p)erseverance and passion for long-term goals.”

  – Predicts educational attainment, Ivy League GPA, West Point retention, National Spelling Bee rank

  – Self-discipline > IQ predict adolescent academic performance,
Motivational Enhancement (3)

• Gratification delay
  
  – Early childhood self-control predicts functioning outcomes 40 years later
  
  • Mischel et al. (2011). *Social Cognitive and Affective Neuroscience*, 6, 252-256.

HOW IS THIS SELF-REGULATION ACHIEVED?????
ADHD as a Reward Deficiency Syndrome

ROLE OF DYSFUNCTIONAL THINKING, MOTIVATION, AND ADULT ADHD
Depression in Adults with ADHD: The Mediating Role of Cognitive-Behavioral Factors
Knouse et al. (2013). Cognitive Therapy & Research, 37, 1220-1232.

METHODS

Participants included 77 adults clinically diagnosed with ADHD.

Participants completed: (a) diagnostic interviews to establish past and current diagnoses of ADHD and depressive disorders; (b) clinician administered rating scales assessing ADHD & depressive symptoms, and stressful life events; and (c) self-report questionnaires measuring ADHD symptom severity (CSS), depressive symptoms (BDI), dysfunctional beliefs (DAS) and behavioral avoidance (CBAS).

Analyses were conducted to determine the relative contribution of (a) ADHD symptoms, (b) dysfunctional beliefs and (c) cognitive-behavioral avoidance to self-reported depression symptoms and current depressive diagnosis.
Depression in Adults with ADHD: The Mediating Role of Cognitive-Behavioral Factors

Results indicated that both dysfunctional beliefs and cognitive-behavioral avoidance accounted for depressive symptoms – these independent variables partially mediated the other, suggesting overlapping and unique variance. Cognitive-behavioral avoidance was more strongly correlated to diagnostic criteria for MDD than dysfunctional beliefs.
Depression in Adults with ADHD: The Mediating Role of Cognitive-Behavioral Factors

**CLINICAL IMPLICATIONS**

“Struggling with ADHD may contribute to the development of negative self-schemas and increase the actual occurrence of salience of failure experiences, contributing to depressive symptoms. At the same time, ADHD symptoms may initially contribute to a more avoidant cognitive and behavioral style that becomes more pervasive and impairing as depressive symptoms worsen.

Treatment of patients who are ‘at-risk’ for depression (i.e. dysthymia) should focus on both modification of dysfunctional attitudes and establishment of active coping patterns. Treatment of patients who are depressed should shift toward more behavioral activation and more active coping patterns.”
Are Negative Automatic Thoughts Associated with ADHD in Adulthood?


**METHODS**

Participants included 81 adults clinically diagnosed with ADHD.

n=34 ADHD+depression, n=47 ADHD-depression, n=43 non-clinical controls

Measures = CAARS Inattentive, ATQ, BDI

ADHD+depression > ADHD-depression > controls on measure of negative thinking
Dysfunctional Cognitions and their Emotional, Behavioral, and Functional Correlates in Adults with Attention Deficit Hyperactivity Disorder (ADHD): Is the Cognitive-Behavioral Model Valid?


**METHODS**

Participants included 35 adults with ADHD, 20 non-ADHD clinical controls, and 20 non-clinical controls.

Measures: ADHD-RS, ATQ, DAS, BDI, STAI, WOCS, AAQoL

ADHD, non-ADHD clinical controls > non-clinical controls ATQ, DAS

Negative thoughts associated with emotions; ADHD also had high escape-avoidance coping

ADHD + emotions + escape-avoidance predicts life impairment
Adult ADHD and the Relationship between Self-Reported Frequency of Cognitive Distortions, Anxiety, and Depression

Strohmeier, Rosenfield, DiTomasso, & Ramsay (2013). *Poster Session, CHADD*

<table>
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<th>Hopelessness</th>
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<td>.533**</td>
<td>.677</td>
<td>.114</td>
<td></td>
</tr>
</tbody>
</table>

Chart review N = 44 adults with ADHD (30 met inclusion criteria)

Measures = BADDS, CAARS, ICD, BDI-II, BAI, BHS

Direct and positive correlation between CAARS-Inattention and Cognitive Distortions (r = .360, p = .033*)
Adult ADHD and the Relationship between Self-Reported Frequency of Cognitive Distortions, Anxiety, and Depression

“Incautiously Optimistic”
Knouse & Mitchell (2014). *Cognitive & Behavioral Practice*, online

- “Positive bias” seen in adult ADHD

- Positively Valenced Cognitive Avoidance

- Function of positive thought
  - Positively valenced cognitive avoidance
  - Sounds good, feels good, must be good
  - Negative reinforcement, avoid discomfort
  - Active comfort requires delay, discomfort

- Over commitment, ambitious projects/goals, etc.
CBT for Adult ADHD

Conceptualize patterns
  – **WHY** don’t I change? (Educate)

Consider alternatives / gain skills
  – **HOW** can I change?
    (Execute)

Gain novel experiences / face challenges
  – **WHEN** do I change? (Experience-Endurance)
Coping Domains for Adult ADHD

- To Do List
- Daily Planner/Planning
- Prioritize/Choreograph
- Break down tasks
- Get started (Procrastination)
- Keep going
- “Manufacture” motivation
- Thoughts, emotions, escape behaviors
- Outsource coping
- Data management
- Materials mgt.
- Environmental Eng.
- Prob mgt./Dec. making
- College, Work
- Relationships
- Health, well-being
- Technology

Yes, I did it!

I will do it

I can do it

I'll try to do it

How do I do it?

I want to do it

I can't do it

I won't do it

Which step have you reached today?
ADHD as a Reward Deficiency Syndrome

CLINICAL EXAMPLE: PROCRASTINATION
Procrastination

“(T)o procrastinate is to voluntarily delay an intended course of action despite expecting to be worse off for the delay.” (p. 66)

PROCRASTINATION

it's exhausting
Facets of Procrastination

- Low conscientiousness
- Self-regulatory failure
- Distractibility
- Organization
- Achievement motivation
- Intention-action gap
- Impulsiveness (more than anxiety)
- Low self-efficacy (fear of failure)
- Less perfectionism
- Prone to boredom
- Aversive task
- Reward delay
- Decreases with age

Summary of CBT for Adult ADHD
Motivational Enhancement Interventions

• Cognitive modification

• Behavioral modification and coping skills

• Implementation strategies

• Acceptance, mindfulness, persistence (emotions)
CBT for Adult ADHD
Motivational Enhancement: Targets

• Task engagement ("Once I get started..."")

• Sustained time "on task"

• Return to task to resume an ongoing project

• Sufficient "on task" episodes across time to achieve completion
The highest possible stage in moral culture is when we recognise that we ought to control our thoughts ...

Whatever makes any bad action familiar to the mind, renders its performance by so much the easier.

Charles Darwin, 1871
The Descent of Man
Cognitive Interventions

- Cognitive error = magnification/minimization
  - Magnify – discomfort, inability, futility, time on task
  - Minimize – tolerate, efficacy, value, process-outcome
  - Change the negative-to-positive ratio

- Cognitive error = overgeneralization + jumping to conclusions
  - Overgeneralization – “I hate this. It is always torture for me.”
  - Jumping to conclusions – “This is going to be just as bad as it always is.”
  - Focus on changing approach, what is in control > what is out of control
Cognitive Interventions (2)

- “Defense Attorney” metaphor
  - Procrastination based on one-sided review of evidence
  - What argument would your Attorney make on your behalf?
  - Challenge the evidence, prolongation to counteract impulsivity
  - Not power of positive thinking, but adaptive thinking
  - Consider ability to manage adequately, behavioral priming
Cognitive Interventions (3)

- Perspective taking, Scaling
- Task expectancy, reprocess
- Increase self-efficacy, engagement (“lower the bar”)
- Enhance personal value of task (salience)
Cognitive Interventions (4)

• Expand image of possible (adaptive) futures, “adjacent possible”

• Focus on actions that will change probabilities of possible outcomes

• Concerns based on past “make perfect sense”...

• ... but what can be done differently NOW?
“On the Fourth of July in 1951, Florence Chadwick, an Olympic swimmer attempted to swim from Catalina Island to the California coast. The challenge was not so much the distance, but the bone-chilling waters of the Pacific. Each minute she spent in those icy waters was an achievement in perseverance. As she swam she was able to endure knowing that land was just so many miles away. But the challenge became more complicated when a dense fog began to veil the entire area, making it impossible for her to see land. After about 15 hours in the water, and within a half mile of her goal, Chadwick gave up. Later she told a reporter, "Look, I’m not excusing myself. But if I could have seen land, I might have made it."
Behavioral Interventions

• Break down task into component steps – “manual and manageable”

  – Identify “old” behavioral script, escape behaviors
    • “What typically happens when you face this situation?”
    • “What diverts you from your intention?”
    • Thoughts, emotions, escape behaviors, distractions, etc.
    • “How does it not happen?” (Reverse Engineering)

  – Develop “new” script for task
    • “How would you program a robot to complete this task?”
    • “Enter the room with a plan. What is a scenario for new result?”
    • “What is a realistic way to manage the diversions?”
    • Step-by-step script (or recipe → actionable)
Behavioral Interventions (2)

• Starting point
  – Point of engagement – “lower the bar”
  – Zeno’s Paradoxes – leaving a room
  – Point at which one moves from “off task” to “on task”

• Behavior > emotion
  – Make the task manual (graduated exposure)
  – “What do you have to do?” (even if you do not feel like doing it)
  – Practice on “small stuff” in everyday life
“I’m not procrastinating. I’m proactively delaying the implementation of the energy-intensive phase of the project until the enthusiasm factor is at its maximum effectiveness.”
Behavioral interventions (3)

• Stimulus control / environmental engineering / reward

• Rework task objectives
  – Time based (10 minute rule)
  – Task based (# paragraphs or specific items)
  – Terrain based (one square foot, specific table top)
Behavioral interventions (4)

• Make task a priority for Daily To Do List
• Schedule task appointment in Daily Planner
• Make task behavioral and actionable
Aron Ralston

“It doesn’t have to be fun to be fun.”

(quoting Mark Twight, author)
Implementation Intention Strategies

“Self-regulation by IMPLEMENTATION INTENTIONS entails delegating action control to pre-specified critical environmental cues. In other words, by planning out in advance when, where, and how a goal is to be transformed into action, implementation intentions disencumber executive functions. As a result, deficits in executive functioning should no longer be apparent in the quality of task performance.” (2008, p. 263)

Implementation Strategies

• Identify specific example of a targeted situation

• Anticipate barriers
  – Old behavioral script

• Define reasonable, desired way to handle it
  – New behavioral script
  – “Enter the room with a plan”

• Plan to engage in task and manage barriers (“If X, then Y”)

Implementation Strategies (2)

- Reinforce commitment to the task
- Outline old script that results in being “stuck”
- Define task in reasonable, behavioral terms
- New behavioral script for task engagement
- Identify “tipping points” for starting the task
- “Knowing yourself as you do, what will help you get started?”
Implementation Strategies (3)

• “What is something you can do to ‘touch’ the task?” (‘IF I sit down at my desk, THEN I will be able to work on the assignment for 15 minutes.”)

• “Knowing yourself as you do, what could disrupt the plan?"

• “Knowing this could happen, how do you plan to handle it?” (‘IF I get interrupted, THEN I will re-read the section of the assignment on which I am working.”)

• Ideal is task goal + implementation plan
What do we want?! Mindfulness!
When do we want it?!
NOW!

Dist. by King Features
Acceptance, Mindfulness, Persistence

• “Acceptance” of discomfort to maintain “commitment” to a valued task.

• “Mindful” recognition of ADHD symptoms, emotional discomfort without escape reaction

• Feel discomfort AND persist on task


Acceptance, Mindfulness, Persistence (2)

- Recognize emotional reaction
- Identifying, labeling the emotion reduces amygdala firing
- Do not use emotional reaction as sole or primary reason to leave a task
- Acknowledge feeling AND persist in moment / on task
- Various emotional management strategies
Acceptance, Mindfulness, Persistence (3)

- Catch yourself having “strayed” (mentally and/or behaviorally)
- Take a moment to reorient, breath, and acknowledge the situation and feelings
- Make and informed decision of where you want to direct yourself, your energy, and your attention
- You can find a way to do “enough”
TAKE AWAY – 10 Minute Rule

• Identify and define task you are avoiding (in behavioral terms)

• Define the time interval you can perform this task, even if it is as AWFUL as you anticipate it will be (e.g., “10 minutes”)

• Define the smallest, most specific, behavioral starting point; If-then plans for barriers

• Get everything you need and be in position to perform the task. Start the clock and give the task an “honest try” for the full 600 seconds.

• Assess the outcome
  – Stop – You did not procrastinate
  – Keep going for another time interval
Make treatment “sticky”

Reminders
- Written behavioral “prescriptions” or “take aways”
- Set up reminders
- Reframe time
- Invest 10 seconds discomfort

Metaphors
- “Swing votes”
- Woody Allen, 9-1-1
- “It doesn’t have to be fun to be fun”
- You do not have to be “in the mood”
Conclusions

• ADHD has serious effects on daily life

• There are many neurobiological elements that contribute to the self-regulatory deficiencies that underlie the phenomenology and life problems associated with adult ADHD

• There are medical and psychosocial interventions that can effectively treat motivational deficits

• A central focus of CBT for adult ADHD is to facilitate and manufacture “motivation” in order to promote activation, implementation, and engagement in life roles
“Perseverance is not a long race; it is many short races one after another.”

Walter Elliott
Contact us

ramsay@mail.med.upenn.edu

rostain@mail.med.upenn.edu
PENN Combined Treatment Model

J. Russell Ramsay & Anthony L. Rostain
THE ADULT ADHD TOOL KIT
Using CBT to Facilitate Coping Inside and Out

J. Russell Ramsay & Anthony L. Rostain
COGNITIVE BEHAVIORAL THERAPY FOR ADULT ADHD
An Integrative Psychosocial and Medical Approach
2nd Edition