

# ADHD and Problem Gambling: A Hidden Disorder

---

Rory C. Reid, Ph.D., LCSW  
Assistant Professor, Neuropsychology  
Research Psychologist  
Licensed Clinical Social Worker

---

Department of Psychiatry  
Resnick Neuropsychiatric Hospital  
University of California Los Angeles



David Geffen  
School of Medicine

California Department of  
**Public Health**



# Disclosures and Conflicts of Interest

---

## Paid Consulting, Honorariums, or Financial Compensation from:

- University of Minnesota Program on Human Sexuality
- Nevada Problem Gambling Center
- California Public Health Department
- Keystone Center, Extended Care Unit, Philadelphia
- National Institute of Mental Health / Grant Funding
- Florida Counsel on Compulsive Gambling
- Royalties from Books / Book Chapters Authored
- South Africa National Counsel on Gambling
- Recovery Resources, Inc., Cleveland, Ohio
- Recovery Bands, LLC / Rehabs.com and Pro Talks Articles



# Objectives of this Presentation

---

- Deepen scientific understanding of ADHD in adults including some aspects of the neurobiological underpinnings linked to ADHD
- Enhance and strengthen ability to accurately assess ADHD in adults with co-occurring gambling disorders
- Disseminate information about relationship between ADHD and gambling disorders
- Discuss treatment options for adults with ADHD



# ADHD and Gambling Disorders



## Research Report

Eur Addict Res 2011;17:231–240

European  
Addiction  
Research

## Attention Deficit Hyperactivity Disorder among Pathological and At-Risk Gamblers Seeking Treatment: A Hidden Disorder

Marie Grall-Bronnec<sup>a,b</sup> Laura Wainstein<sup>a,b</sup> Jennyfer Augy<sup>a</sup> Gaëlle Bouju<sup>a</sup>  
Fanny Feuillet<sup>b,c</sup> Jean-Luc Vénisse<sup>a</sup> Véronique Sébille-Rivain<sup>b,c</sup>

<sup>a</sup>Reference Centre for Excessive Gambling, Department of Addictology, <sup>b</sup>EA 4275 Biostatistics, Clinical Research and Subjective Measures in Health Sciences, and <sup>c</sup>Biostatistics Department, University Hospital of Nantes, Nantes, France



David Geffen  
School of Medicine

**UCLA** Health System

# Parallels / Overlap with ADHD and Gambling Disorders

## Gambling Disorders

## ADHD

Preoccupation



Hyperfocusing

Escape



Distractibility / Daydreaming

Lying



Lying

Loss of Control



Impulse Control Problems

Risking Relationships



Lack of Future Directed

Chasing Behaviors

Thinking; Risk-Taking,

Excitement-Seeking

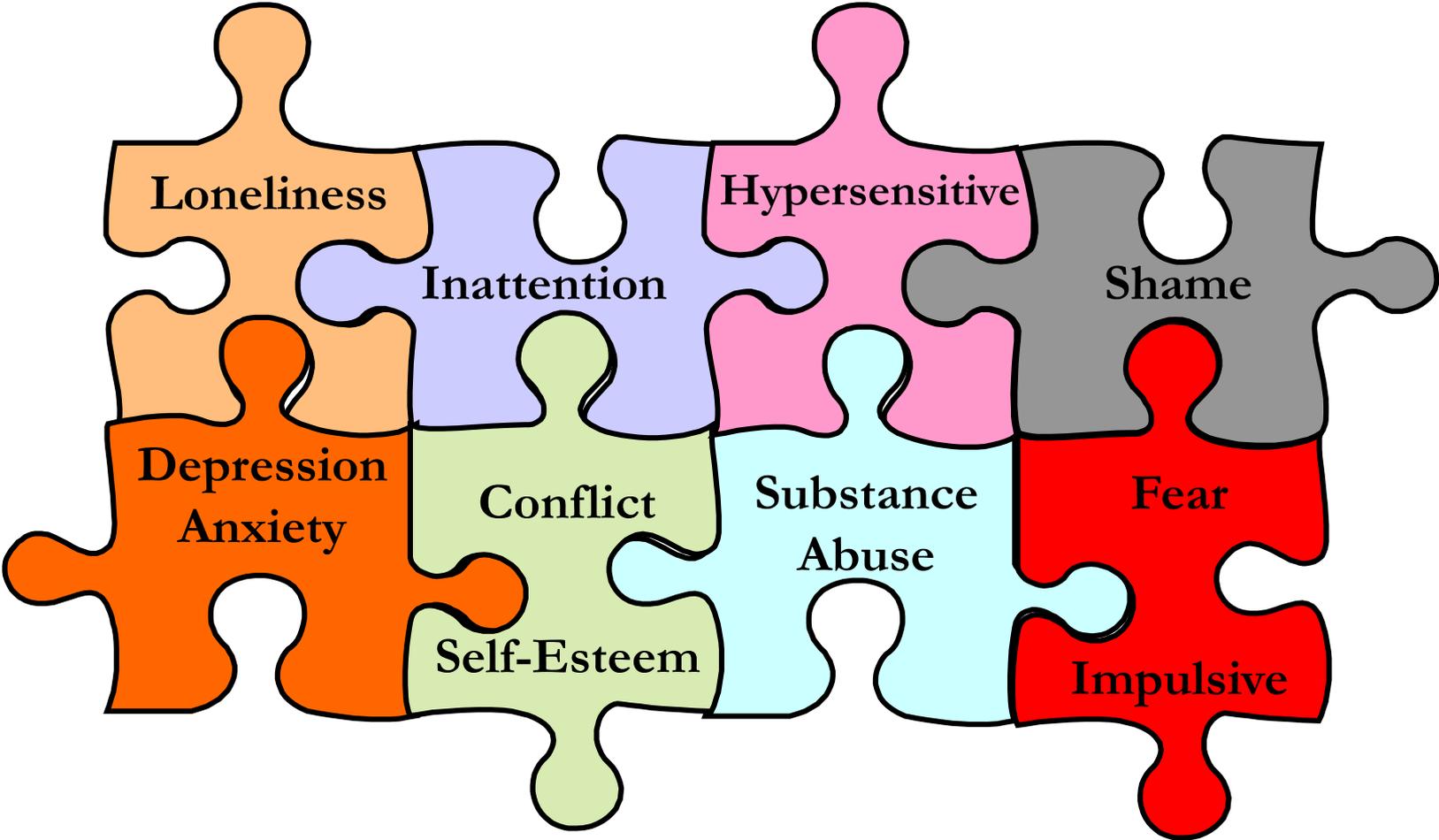
Bailouts



Being Rescued



# Underlying / Associated Features of Gambling Problems and ADHD



# Why ADHD and Problem Gambling

- Current studies suggest that the prevalence of adult ADHD in problem gamblers is ~ 10 – 20%.
- Perhaps the more relevant question is why are individuals with ADHD at increased risk for a variety of addictive behaviors, in particular:

**Alcohol and Drug Addictions (19% - 33%)**

**Hypersexual Behavior Sex Addiction (23% to 28%)**



David Geffen  
School of Medicine

**UCLA** Health System

# Comparable Levels of Impulsivity

Addictive Behaviors 39 (2014) 1640–1645

Contents lists available at ScienceDirect

Addictive Behaviors

ELSEVIER

ADDICTIVE BEHAVIORS

Psychometric properties of the Barratt Impulsiveness Scale in patients with gambling disorders, hypersexuality, and methamphetamine dependence

Rory C. Reid <sup>a,\*</sup>, Melissa A. Cyders <sup>b</sup>, Jacqueline F. Moghaddam <sup>a</sup>, Timothy W. Fong <sup>a</sup>

<sup>a</sup> Department of Psychiatry and Biobehavioral Sciences, University of California, Los Angeles, United States  
<sup>b</sup> Department of Psychology, Indiana University–Purdue University, Indianapolis, United States

CrossMark

HIGHLIGHTS

- Barratt Impulsiveness Scale factor structure is assessed in three clinical samples
- Modifications to the BIS resulted in a goodness of fit for a 3-factor model
- Minor variations in impulsivity exist between our three populations
- Approximately half of patients in each group exhibited high impulsivity
- Future studies with addictive populations should consider this modified BIS

ARTICLE INFO

Available online 19 November 2013

Keywords:  
Barratt Impulsiveness Scale  
Gambling disorder  
Hypersexual behavior  
Substance-abuse  
Impulsivity  
Addiction

ABSTRACT

Although the Barratt Impulsiveness Scale (BIS; Patton, Stanford, & Barratt, 1995) is a widely-used self-report measure of impulsivity, there have been numerous questions about the invariance of the factor structure across clinical populations (Haden & Shiva, 2008, 2009; Ireland & Archer, 2008). The goal of this article is to examine the factor structure of the BIS among a sample consisting of three populations exhibiting addictive behaviors and impulsivity: pathological gamblers, hypersexual patients, and individuals seeking treatment for methamphetamine dependence to determine if modification to the existing factors might improve the psychometric properties of the BIS. The current study found that the factor structure of the BIS does not replicate in this sample and instead produces a 12-item three-factor solution consisting of motor-impulsiveness (5 items), non-planning impulsiveness (3 items), and immediacy impulsiveness (4 items). The clinical utility of the BIS in this population is questionable. The authors suggest future studies to investigate comparisons with this modified version of the BIS and other impulsivity scales such as the UPPS-P Impulsive Behavior Scale in clinical populations when assessing disposition toward rash action.

© 2013 Published by Elsevier Ltd.

## Clinical Levels of Impulsivity

Gamblers	48.8%
Hypersexuals	48.0%
Meth Abusers	44.4%



David Geffen  
School of Medicine

UCLA Health System

# Similar Patterns in Patients with ADHD and Hypersexual Behavior

## MANAGEMENT PERSPECTIVE



### Perspectives on the assessment and treatment of adult ADHD in hypersexual men

Rory C Reid<sup>1</sup>, Margarit Davtian<sup>1</sup>, Agatha Lenartowicz<sup>2</sup>, Reshil M Torrevillas<sup>1</sup> & Timothy W Fong<sup>1</sup>

#### Practice points

- Adult patients seeking help for hypersexual behavior present with high prevalence rates of comorbid mood and anxiety disorders, ADHD and substance-related disorders.
- Many of the associated characteristics of ADHD, such as increased peer rejection, problems in romantic relationships and employment difficulties, may make individuals vulnerable to hypersexual behavior as a way of 'escaping' or 'avoiding' emotional discomfort.
- Clinicians should be aware of some of the unique characteristics of hypersexual patients in order to avoid misdiagnosing them with adult ADHD.
- Careful screening and diagnostic assessment for adult ADHD in hypersexual patients can differentiate legitimate cases of ADHD from symptoms that are associated with hypersexual behavior.
- Patients with hypersexual behavior and comorbid ADHD are likely to benefit from pharmacotherapy and behavioral therapy combined. Mindfulness interventions are also showing some preliminary evidence in producing positive outcomes in patients with adult ADHD and hypersexual behavior.

**SUMMARY** This article reviews the current body of research on adult ADHD and hypersexual behavior. Drawing on perspectives from the fields of psychology and neuroscience, several suggestions are offered to explain why individuals with ADHD may be vulnerable to engaging in hypersexual behavior. Assessment guidelines are provided to help clinicians differentiate characteristics of hypersexuality from adult ADHD. Finally, recommendations are made for the treatment of adult ADHD in hypersexual patients.

During the past decade an increasing number of clinicians and researchers have attempted to elucidate the associated characteristics of hypersexual behavior in an effort to provide greater understanding of this phenomenon [1-5]. Several studies have specifically focused on exploring psychopathology in hypersexual

populations, including the presence of comorbid adult ADHD [4]. Although research suggests a high prevalence rate of adult ADHD among hypersexual men [6], many providers neglect to assess ADHD at the onset of treatment. Moreover, little has been written about why an individual with ADHD may be vulnerable to

<sup>1</sup>University of California, Los Angeles, 760 Westwood Boulevard, Suite 38-151, Los Angeles, CA 90024, USA  
<sup>2</sup>Author for correspondence; Tel: +1 310 825 4050; email: mlenart@ucla.edu

Future  
Medicine part of fsg

10.2217/NPY.13.31 © 2013 Future Medicine Ltd

Neuropsychiatry (2013) 3(3), 295-308

ISSN 1758-2008

295

## THE JOURNAL OF NEUROPSYCHIATRY and Clinical Neurosciences

The Official Journal of the American Neuropsychiatric Association

#### In this issue:

- Psychotherapy for PTSD: Neuroimaging of Recovery Processes
- Toward an Understanding of Decision Making in Severe Mental Illness
- Kissing or "Osculation" in Frontotemporal Dementia
- Association Between Clinical Measures and Florbetapir F18 PET Neuroimaging in Mild or Moderate Alzheimer's Disease Dementia
- Skin Conductance Levels May Reflect Emotional Blunting in Behavioral Variant Frontotemporal Dementia



Volume 26 • Number 3 • Summer 2014

Visit our web site at:  
[neuro.psychiatryonline.org](http://neuro.psychiatryonline.org)



David Geffen  
School of Medicine

UCLA Health System

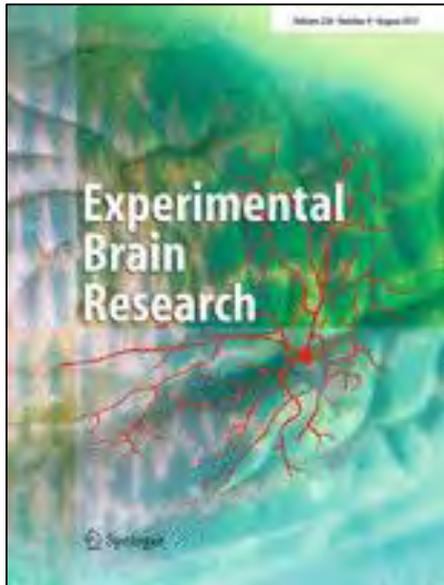
# What Do We Know about ADHD and Gambling Disorders?

## Common Challenges with ADHD:

- Social rejection, loneliness
- Academic underachievement
- Emotional dysregulation
- Difficulties with task-completion
- Poor-self concept, shame
- Diminished identity-formation
- Relationship difficulties
- Attrition from college
- Poor work performance

Increased tendency to **ESCAPE**,  
disconnect, numb out, etc...





Exp Brain Res (2012) 221:59–67  
DOI 10.1007/s00221-012-3147-z

RESEARCH ARTICLE

## Exploring the relationship between boredom and sustained attention

Ela Malkovsky · Colleen Merrifield ·  
Yael Goldberg · James Danckert

Received: 7 February 2012 / Accepted: 10 June 2012 / Published online: 23 June 2012  
© Springer-Verlag 2012

**Abstract** Boredom is a common experience, prevalent in neurological and psychiatric populations, yet its cognitive characteristics remain poorly understood. We explored the relationship between boredom proneness, sustained attention and adult symptoms of attention deficit hyperactivity disorder (ADHD). The results showed that high boredom-prone individuals (HBP) performed poorly on measures of sustained attention and showed increased symptoms of ADHD and depression. The results also showed that HBP

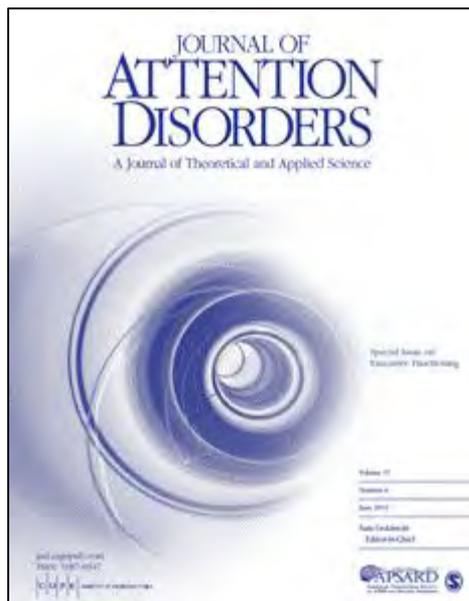
has covered a range of disparate fields, and the boredom varies according to the context and factors associated with the experience. Boredom is related to decreased attention and reduced at work and school (Kass et al. 2001; O'H Pekrun et al. 2010). Boredom is a frequent depressive symptom following traumatic (Kreutzer et al. 2001), and the effects of detrimental to treatment and rehabilitation of



David Geffen  
School of Medicine

UCLA Health System

# ADHD and Boredom Proneness



## Boredom proneness and sleep disorders as predictors of adult attention deficit scores

Steven J. Kass, J. Craig Wallace, and Stephen J. Vodanovich

This study examined the extent to which boredom proneness and sleep disturbances were related to attention deficit scores in college-aged adults.

In a sample of 148 college students, Attention scores on the Adult Behavior Checklist were best predicted by Boredom Proneness (BP) subscale scores, which assess one's inability to maintain internal stimulation and feelings of constraint, and scores on the Epworth Daytime Sleepiness Scale and Athens Insomnia Scale ( $R^2 = .57$ ). Hyperactivity scores were best predicted by the BP subscales, which assess one's need for a stimulating environment, the perception of time passing slowly, and feelings of constraint, and the Epworth Scale ( $R^2 = .51$ ).

The findings contribute to the understanding of the symptomatology of attention deficit in adults and provide further evidence of the validity of this measure.

Boredom has been commonly described as a negative, dissatisfying emotional state that is mitigated by individual cognitive capabilities or tendencies (e.g., de Chenne &

Congruent with the manner in which boredom has been conceptualized above, the empirical literature suggests that boredom-prone individuals perform below average on tasks

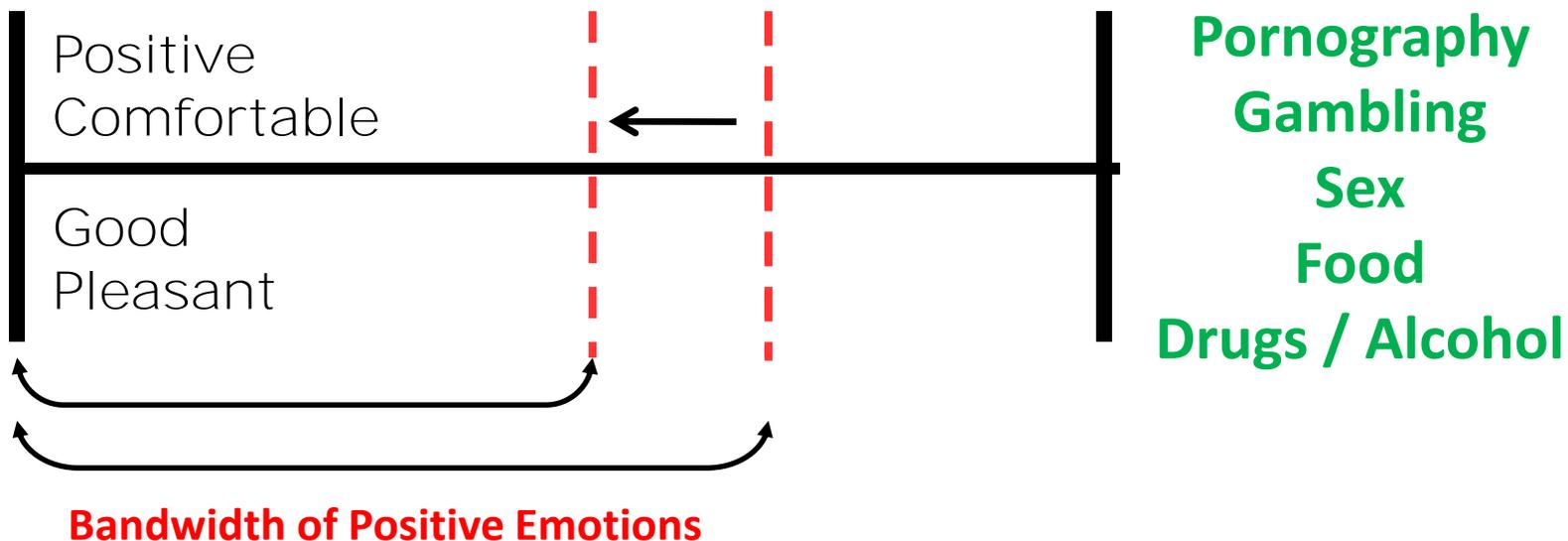


David Geffen  
School of Medicine

UCLA

Health System

# The Paradox of Emotional Avoidance



Emotionally avoidant people become numb and detached from both good and bad feelings. True, they've avoided pain and negative emotion, but they've also diminished or extinguished their ability to feel positive emotions.



# Contrast Creates Opportunities for Comparison and Appreciation

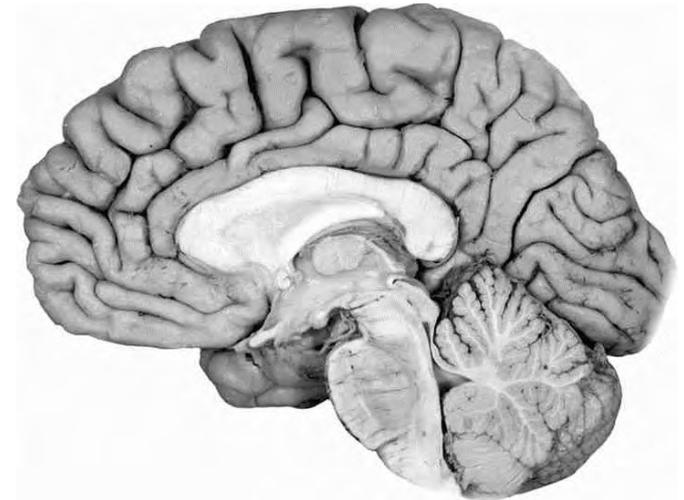
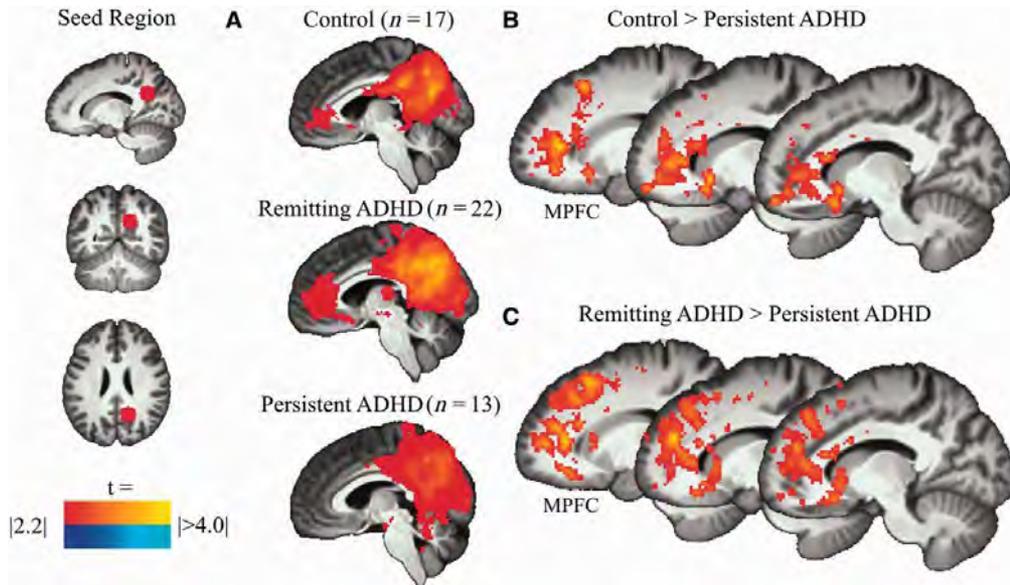


David Geffen  
School of Medicine

**UCLA** Health System

# Neuroscience Findings

## Just a Few Thoughts about ADHD and the Brain



# Conflict Monitoring and Resolution

---

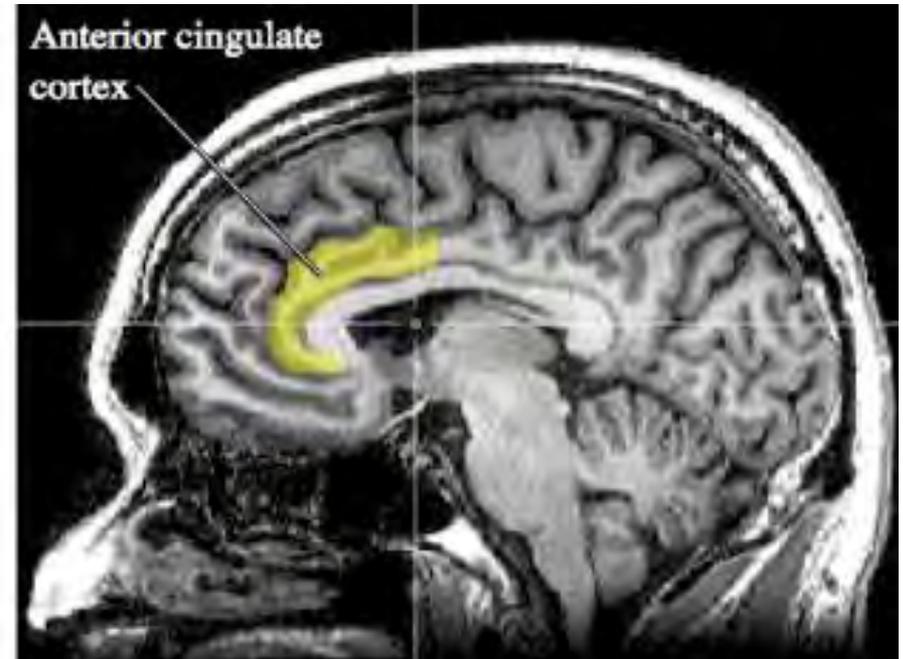
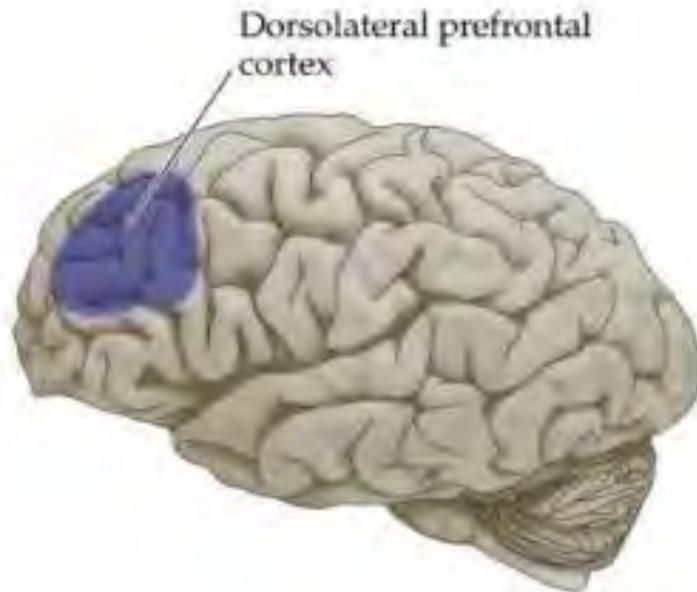
## Difficulties with Sustained Attention and Inhibition of Competing Stimuli

---



# Conflict Monitoring and Resolution

## Difficulties with Sustained Attention and Inhibition of Competing Stimuli



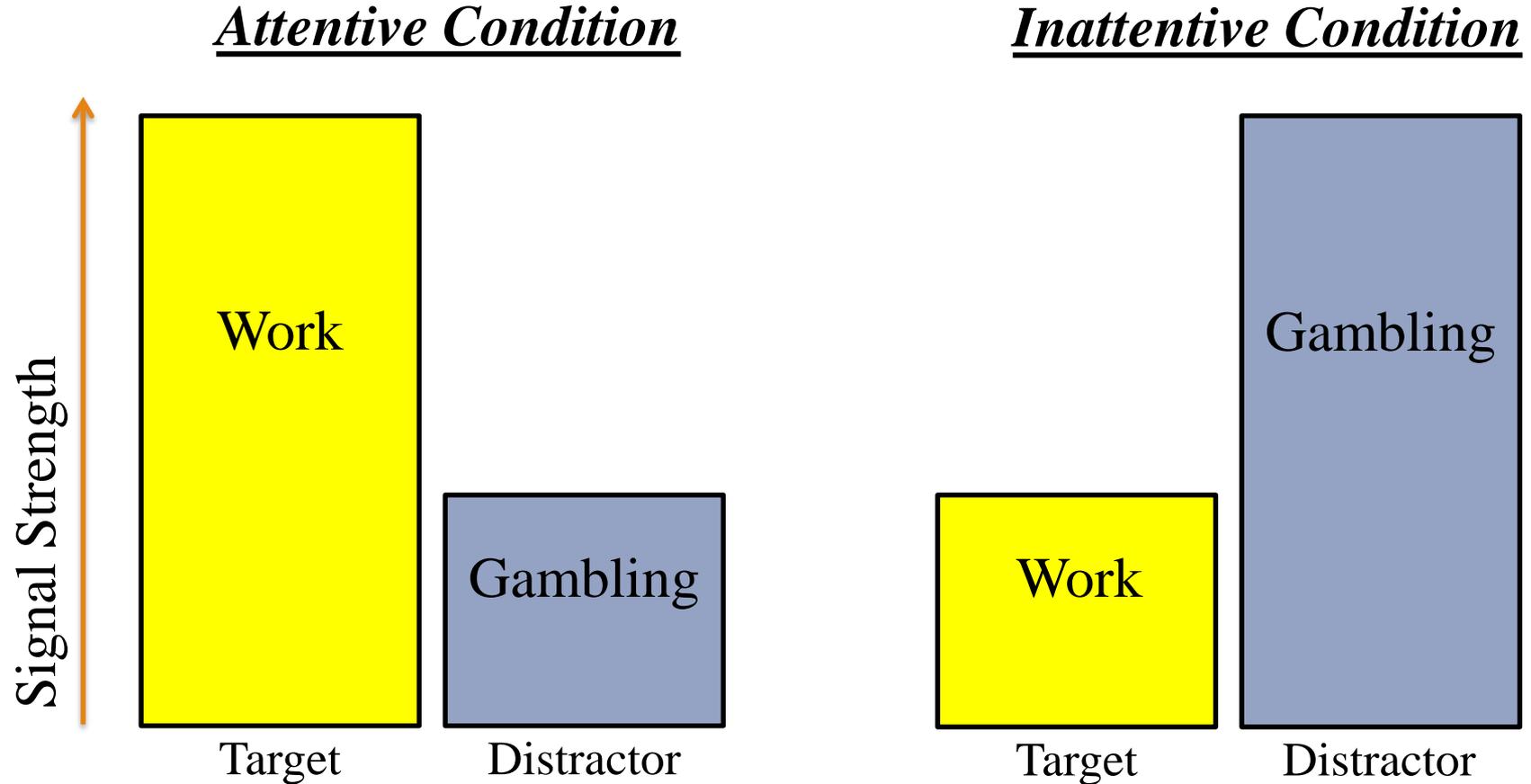
# An Attention Model of Gambling Addictions?

Inability to **sustain attention and vigilance** on the target stimuli, and **inhibit focused attention** to the distractor stimuli.



# An Attention Model of Gambling Addictions continued

## Attentional Model of Gambling Addictions



# Motivation and Reward

## Deficits in the Dopamine Reward Pathway in Adults with ADHD

PRELIMINARY  
COMMUNICATION

### Evaluating Dopamine Reward Pathway in ADHD Clinical Implications

Nora D. Volkow, MD

Gene-Jack Wang, MD

Scott H. Kollins, PhD

Tim L. Wigal, PhD

Jeffrey H. Newcorn, MD

Frank Telang, MD

Joanna S. Fowler, PhD

**Context** Attention-deficit/hyperactivity disorder (ADHD)—characterized by symptoms of inattention and hyperactivity-impulsivity—is the most prevalent childhood psychiatric disorder that frequently persists into adulthood, and there is increasing evidence of reward-motivation deficits in this disorder.

**Objective** To evaluate biological bases that might underlie a reward/motivation deficit by imaging key components of the brain dopamine reward pathway (mesoaccumbens).

**Design, Setting, and Participants** We used positron emission tomography to measure dopamine synaptic markers (transporters and D<sub>2</sub>/D<sub>3</sub> receptors) in 53 nonmedicated adults with ADHD and 44 healthy controls between 2004–2009 at Brookhaven

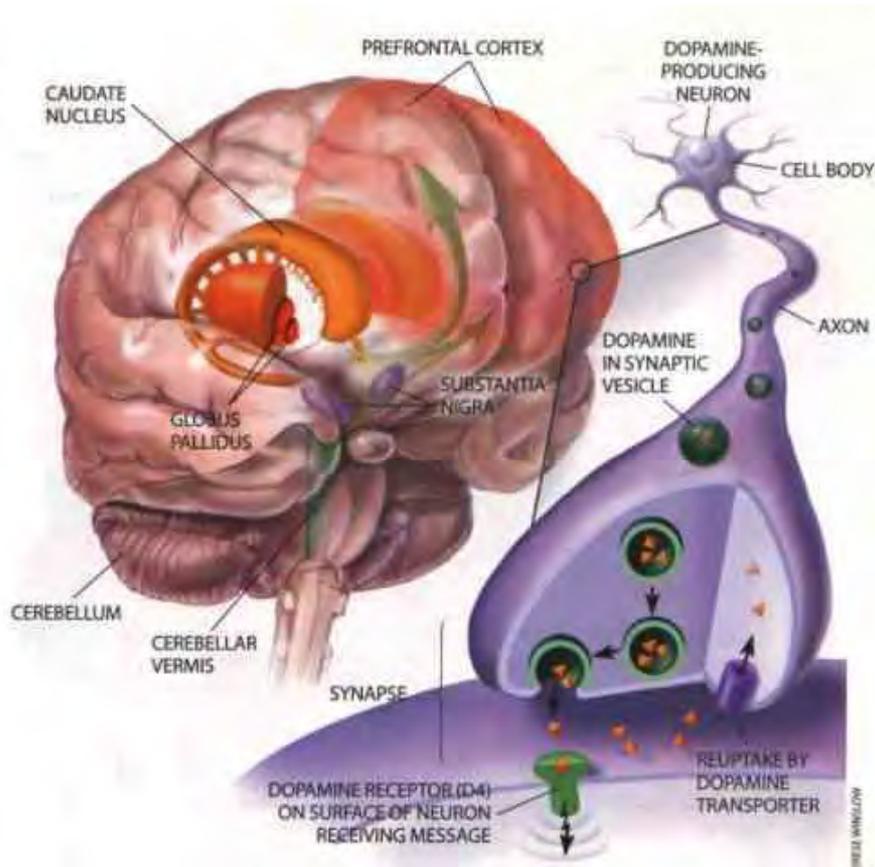


David Geffen  
School of Medicine

UCLA Health System

# Dopamine, Reward, and Motivation Pathways

## Decreased activation of nucleus accumbens in ADHD in rewards



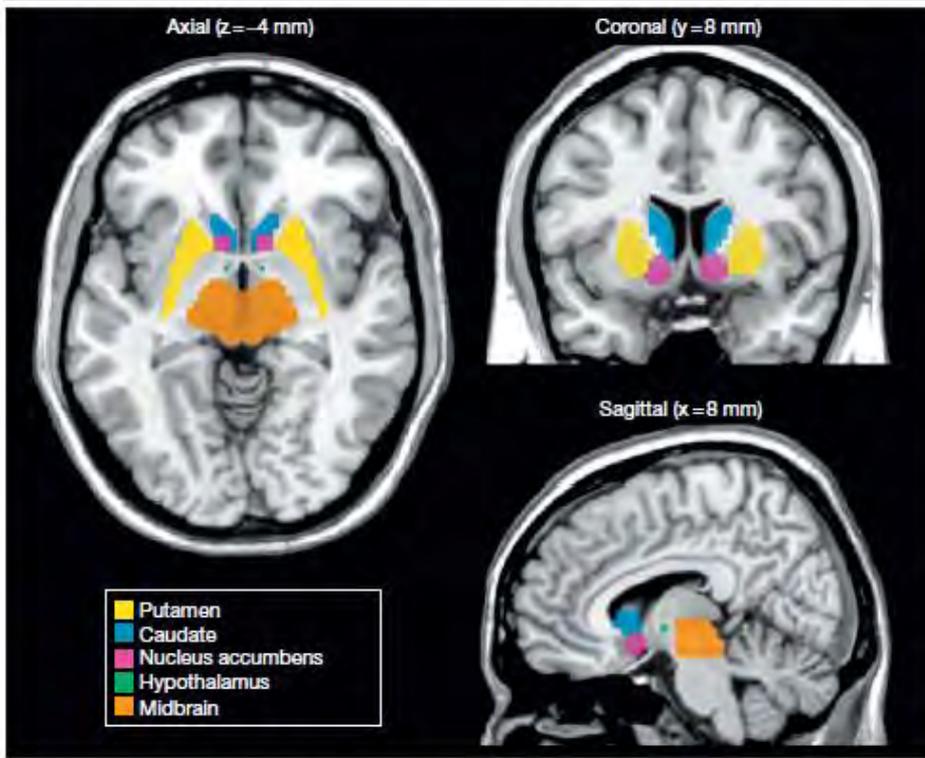
- Lower D2/D3 receptor availability
- Reward deficits with failure to delay gratification, preference for small immediate rewards over larger delayed rewards
- Dopamine deficits linked to symptoms of inattention (e.g. most pronounced in tasks considered **boring, repetitive, uninteresting**)
- Higher risk / vulnerability for addiction to intensify rewards



# Dopamine, Reward, and Motivation Pathways

## Lower dopamine receptivity availability in hypothalamic region

**Figure 1.** Regions of Interest Used to Extract the D<sub>2</sub> / D<sub>3</sub> Receptor and Dopamine Transporter Measures



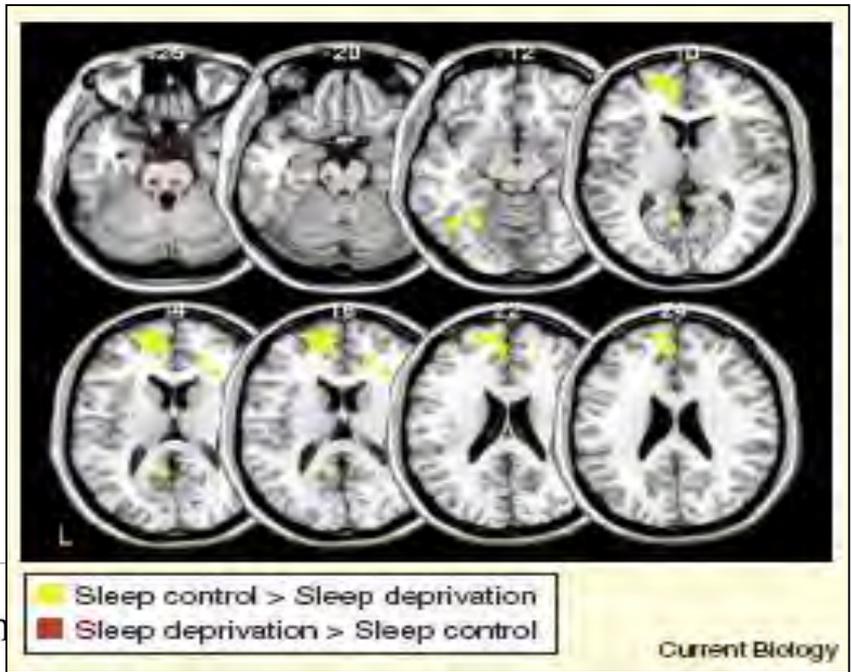
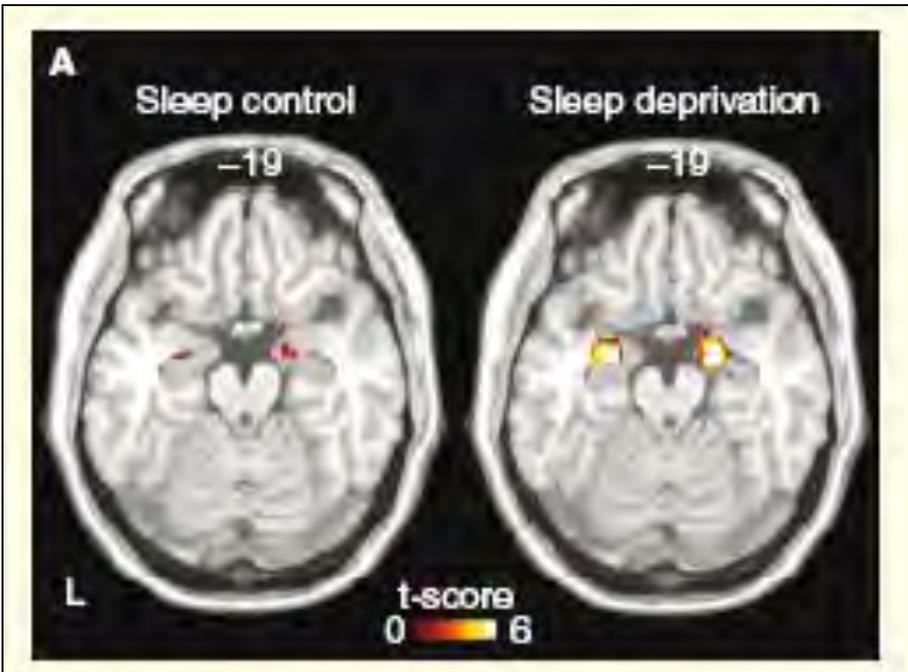
The regions of interest for the midbrain are obtained in several planes, and the shadow is projected to the axial image shown in the figure, which explains why the third ventricle is covered by the region. The x coordinate maps the left-right position; the y coordinate, the anterior-posterior position; and the z coordinate, the superior-inferior position.

- Some evidence for co-occurring hypothalamic pathology with ADHD such as:
- **Sleep disturbances**
- **Overweight or obesity issues**
- **Abnormal responses to stress**



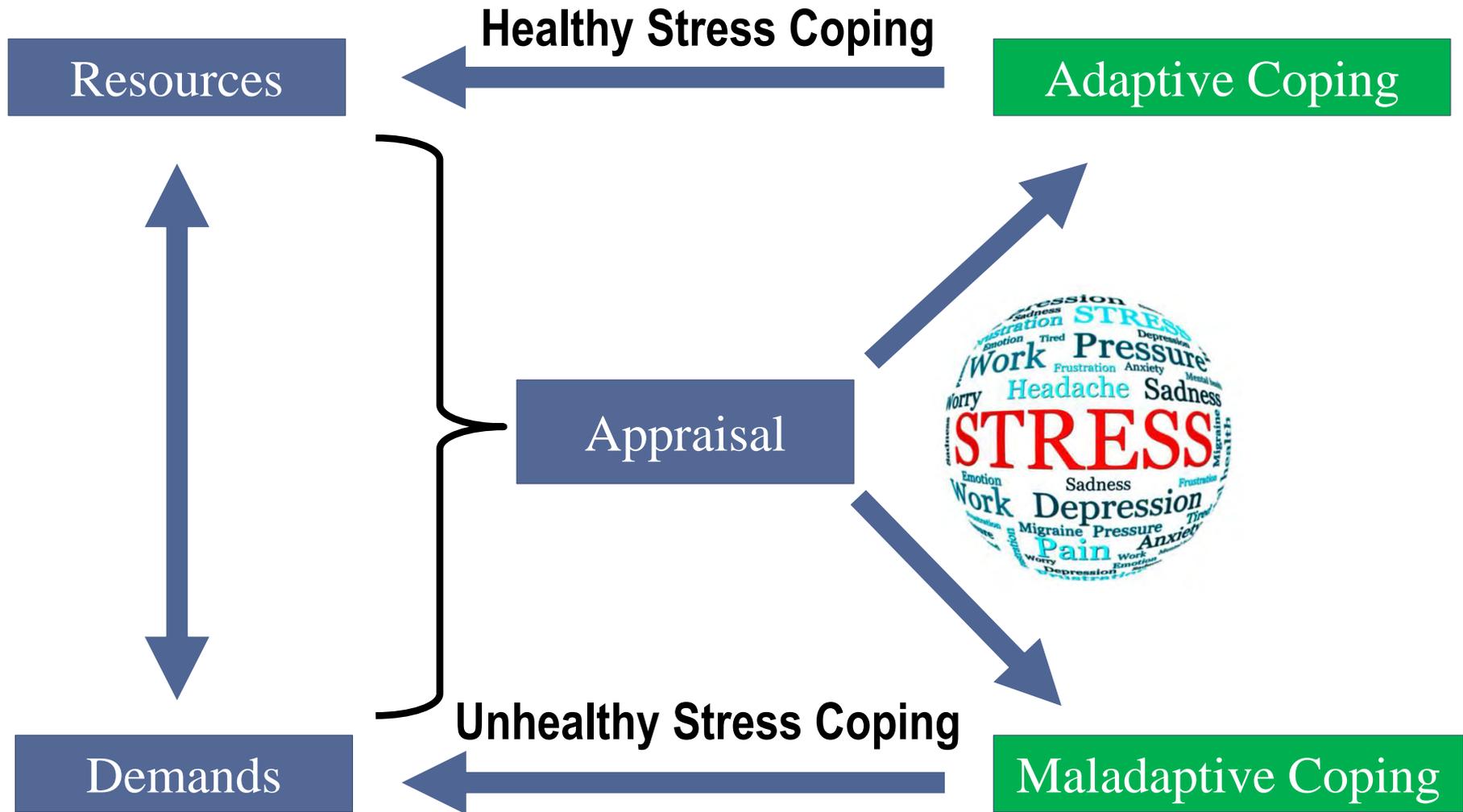
# Sleep Deprivation and Negative Emotional Appraisals

Increased response to negative stimuli and loss of functional connectivity with the MPFC. Thus, it may be that a good nights sleep “resets” the brain to cope with next-day emotional challenges by maintaining integrity of the MPFC-amygdala circuit.



en

# Adult ADHD and Stress Coping: STRESS = ESCAPE = GAMBLE



# How to Make Stress Your Friend: Dr. Kelly McGonigal



AUTHOR OF THE INTERNATIONAL BESTSELLER THE WILLPOWER INSTINCT

**KELLY MCGONIGAL, PH.D.**

## THE UPSIDE OF STRESS

**WHY STRESS IS GOOD FOR YOU,  
and HOW TO GET GOOD AT IT**



David Geffen  
School of Medicine

**UCLA** Health System

## DSM-5 Changes to ADHD Criteria

---



# Changes from DSM-IV to DSM-5 for ADHD

---

## DSM-5 ADHD Diagnosis in “Neurodevelopmental Disorders” chapter:

1. Examples have been added to the criterion items to facilitate application across the life span;
2. The cross-situational requirement has been strengthened to “several” symptoms in each setting
3. The onset criterion has been changed from “symptoms that caused impairment were present before age 7 years” to “several inattentive or hyperactive-impulsive symptoms were present prior to age 12”;
4. Comorbid diagnosis with autism spectrum disorder is now allowed
5. Change from 6 symptoms to 5 for those > 17 age
6. Impairment to “interfere” or “reduce quality” of work, school, etc...



# Criticisms of DSM-5 Criteria for ADHD

---

- Inadequate information on important role of emotions in ADHD. It does not pick up the impaired motivational aspect of emotions which makes it so difficult for many with ADHD to get started on or sustain effort for tasks not intrinsically interesting to them. And it does not include any symptoms that reflect characteristic problems of persons with ADHD in modulating their experience and expression of emotions.
- DSM-5 does not recognize the importance of problems in regulating sleep and alertness which have been identified in research on ADHD in children and adults.



# Assessing Adult ADHD in Patients with Gambling Disorders

---

1. Self-report questionnaires
2. Collateral information
3. Neuropsychological testing
4. DSM-5 “No biological marker is diagnostic for ADHD.”
5. Diagnostic interview for ADHD (e.g. MINI 6 with ADHD Module)

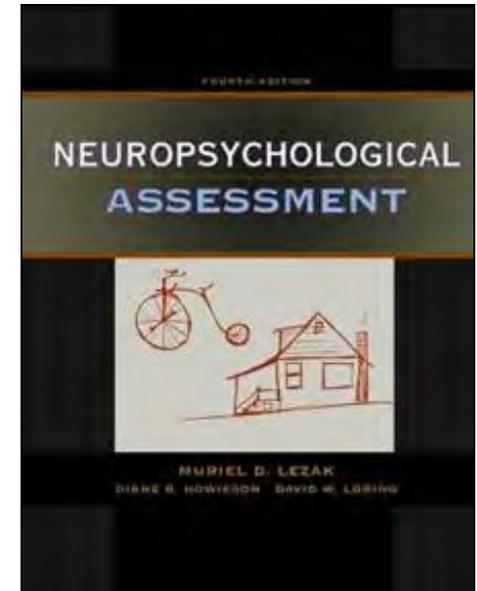
Note: No biological marker is diagnostic for ADHD. As a group, compared with peers, children with ADHD display increased slow wave electroencephalograms, reduced total brain volume on magnetic resonance imaging, and possibly a delay in posterior to anterior cortical maturation, but these findings are not diagnostic.



# Assessing Adult ADHD with Greater Specificity: A Few Considerations

Assessment of ADHD requires careful evaluation of the **amount of effort** an individual must exert to control their cognitive activities.

Screening tools, neuropsychological tests, and scales are **correlated** with a diagnosis of ADHD but do not designate caseness



David Geffen  
School of Medicine

**UCLA** Health System

# Compensatory / Avoidant Efforts May Hide Symptom Impact

Patients opt out or defer challenging / overwhelming activities

(e.g. pursued alternative college education than one desired)

Compensation may be a burden

- Significant efforts required to maintain attention, control behavior
- Overreliance on organizational / reminder systems
- Overreliance on others for structure, deferred tasks
- Longer hours / more time required to compensate for *inefficiency*\*
  - greater frequency of distractibility, mind wandering
  - poor working memory (e.g. necessary for prioritizing)
  - under-estimating time
  - short-cut taking creates additional problems
  - poor planning, tendencies to procrastinate
  - difficulties with multi-tasking / divided attention



# Assessing Adult ADHD with Greater Specificity: A Few Considerations

---

**Reliable information** contributes to a reliable diagnosis



David Geffen  
School of Medicine

**UCLA** Health System

# Assessment of Inattentive Symptoms of Adult ADHD

---

Often fails to give **close attention to details** or makes **careless mistakes** in schoolwork, at work, or during other activities

- What were your grades like in school, college? Was there any class that was particularly challenging for you?
- Observe how they've completed assessment questionnaires
- When you make mistakes at work, what do they involve?
- How would you rate your ability to pay close attention to details? How would you now if you made errors?



# Assessment of Inattentive Symptoms of Adult ADHD

---

Often has **difficulty sustaining attention** in tasks or play activities

- If I'm a video camera watching you read a book for one of your college classes, what would I see happen? Has this pattern always been true for you or can you ever think of a time where it wasn't true?
- How do you experience lengthy lectures or presentations at school or work?
- What, if any, tasks are particularly difficult for you if they require you to sustain and focus your attention?



# Suggestions for Tools to Gather Information about ADHD Symptoms

---

- [Adult ADHD Self-Report Scale](#) (18-Item / 6-Item)
- [UCLA Adult ADHD Symptom Scale](#)
- [Conners Adult ADHD Rating Scales](#) (Self Report / Observer)
- [Wender Utah Rating Scale](#) (25-Item) Cut-Off  $\geq 46$
- ADHD Symptoms and Role Impact Inventory
- [Weiss Functional Impairment Rating Scale Self-Report](#)
- Behavior Rating Inventory of Executive Functions — Adults



# Adult ADHD Self-Report Scale

## Adult Self-Report Scale-V1.1 (ASRS-V1.1) Screener from WHO Composite International Diagnostic Interview

Date

Check the box that best describes how you have felt and conducted yourself over the past 6 months. Please give the completed questionnaire to your healthcare professional during your next appointment to discuss the results.

1. How often do you have trouble wrapping up the final details of a project, once the challenging parts have been done?
2. How often do you have difficulty getting things in order when you have to do a task that requires organization?
3. How often do you have problems remembering appointments or obligations?
4. When you have a task that requires a lot of thought, how often do you avoid or delay getting started?
5. How often do you fidget or squirm with your hands or feet when you have to sit down for a long time?
6. How often do you feel overly active and compelled to do things, like you were driven by a motor?

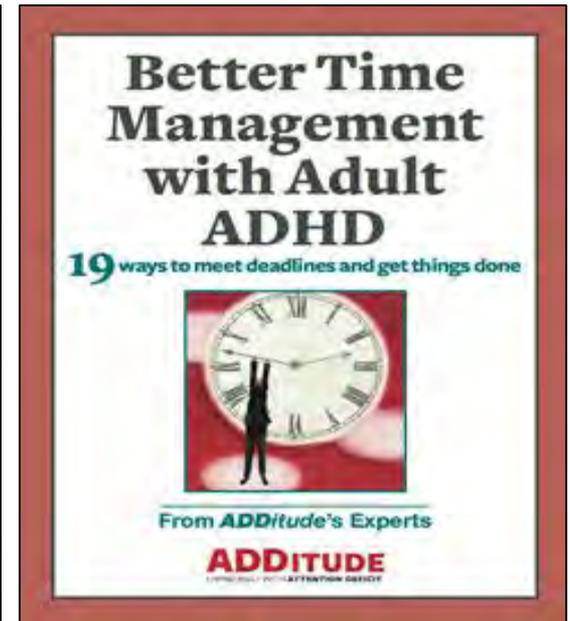
	Never	Rarely	Sometimes	Often	Very Often

Add the number of checkmarks that appear in the darkly shaded area. Four (4) or more checkmarks indicate that your symptoms may be consistent with Adult ADHD. It may be beneficial for you to talk with your healthcare provider about an evaluation.



# Inattention and Time Estimation

An accurate estimation of how long something will take to complete requires several aspects of **attention**.



David Geffen  
School of Medicine

**UCLA** Health System

## Treatment

---



# Mindfulness and ADHD

Article

## A Pilot Trial of Mindfulness Meditation Training for ADHD in Adulthood: Impact on Core Symptoms, Executive Functioning, and Emotion Dysregulation

John T. Mitchell<sup>1</sup>, Elizabeth M. McIntyre<sup>1</sup>, Joseph S. English<sup>1</sup>, Jean C. Beckham<sup>1,2,3</sup>, and Scott H. Kollins<sup>1</sup>

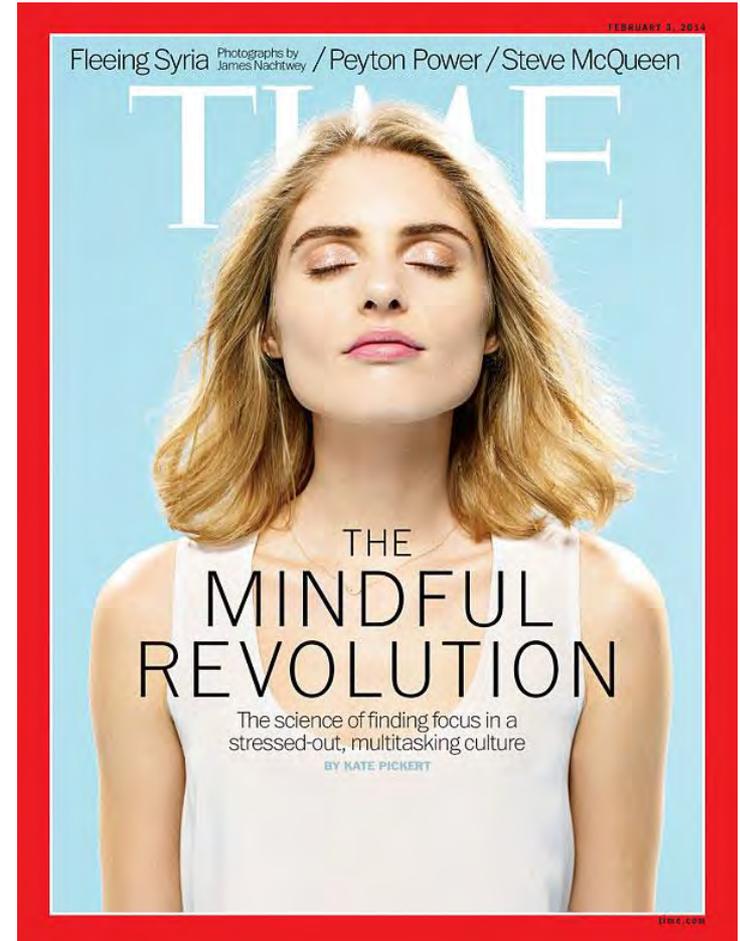
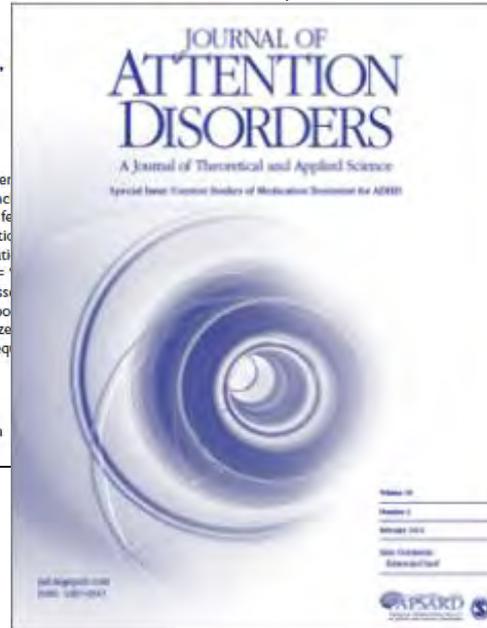
### Abstract

**Objective:** Mindfulness meditation training is garnering increasing empirical interest in adulthood, although no studies of mindfulness as a standalone treatment have included adults with ADHD or a comparison group. The aim of this study was to assess the efficacy of mindfulness meditation for ADHD, executive functioning (EF), and emotion dysregulation in an ADHD sample. **Method:** Adults with ADHD were stratified by ADHD medication status into an 8-week group-based mindfulness treatment (n = 11) or waitlist group (n = 11). Acceptability was positive. In addition, self-reported ADHD and EF symptoms (assessed at baseline and 8 weeks), clinician ratings of ADHD and EF symptoms, and self-reported ADHD and EF symptoms over time with large effect size were observed. **Conclusion:** Findings support preliminary treatment efficacy, though replication is needed.

### Keywords

ADHD, adults, mindfulness meditation training, executive functioning, emotion assessment

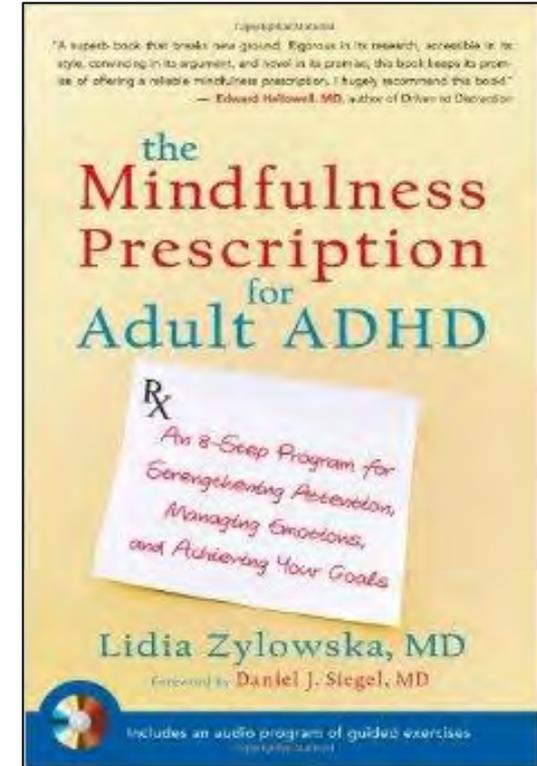
Journal of Attention Disorders  
2013, Vol. XX(X) 1–16  
© 2013 SAGE Publications  
Reprints and permissions:  
sagepub.com/journalsPermissions.nav  
DOI: 10.1177/1087054713513328  
jad.sagepub.com  
SAGE



David Geffen  
School of Medicine

UCLA Health System

# Mindfulness and ADHD?



David Geffen  
School of Medicine

UCLA Health System

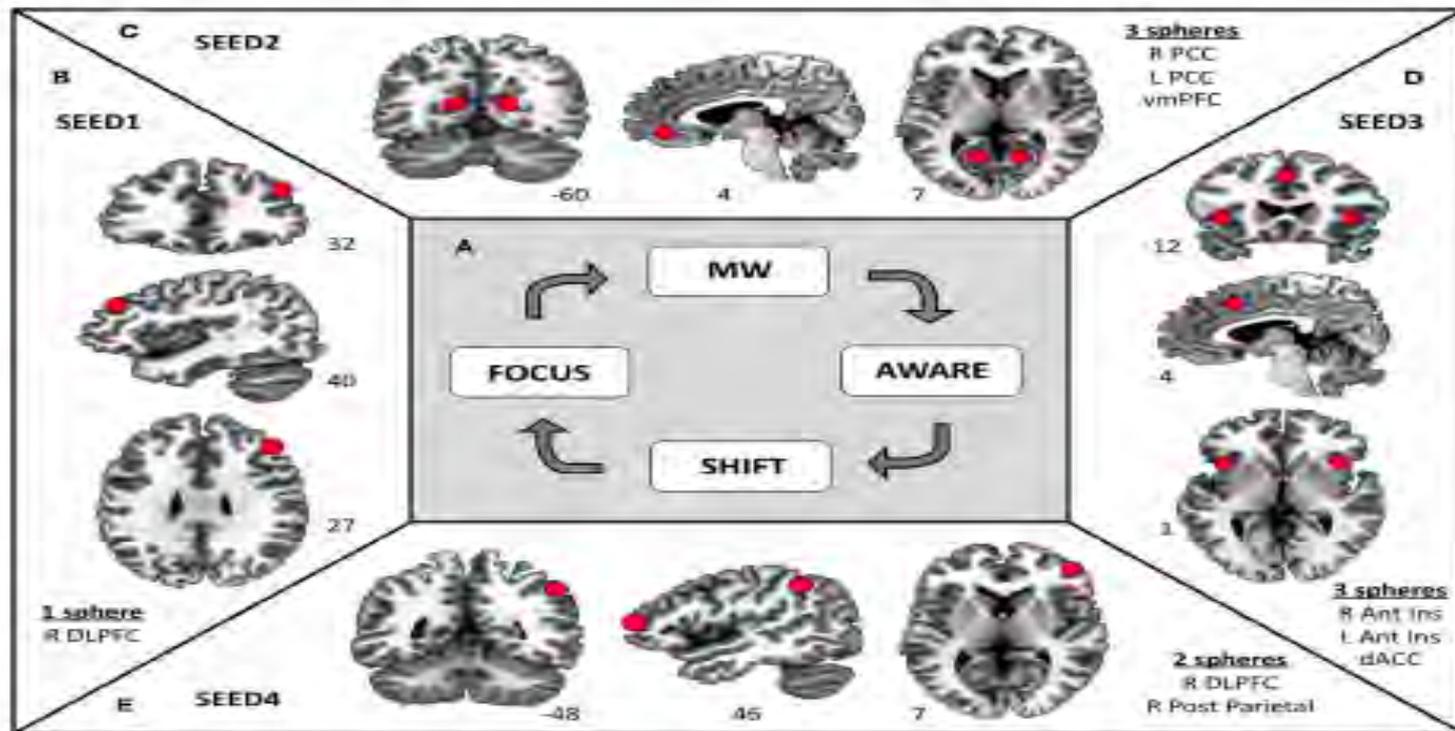
# ADHD and Mindfulness



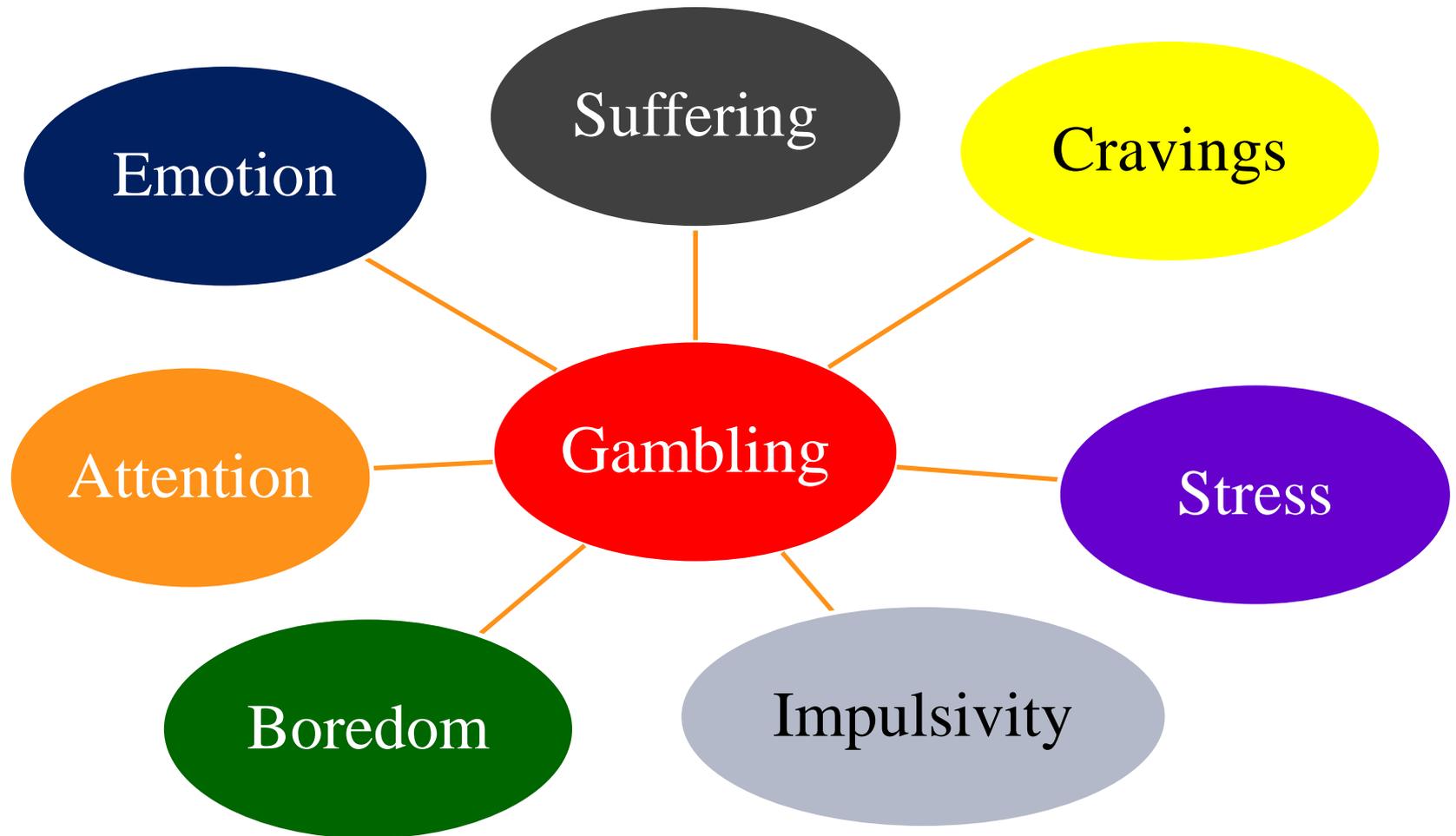
## Effects of meditation experience on functional connectivity of distributed brain networks

Wendy Hasenkamp\* and Lawrence W. Barsalou

Department of Psychology, Emory University, Atlanta, GA, USA



# Goodness of Fit for ADHD and Gambling Disorders



# Mindfulness and Cravings / Urges

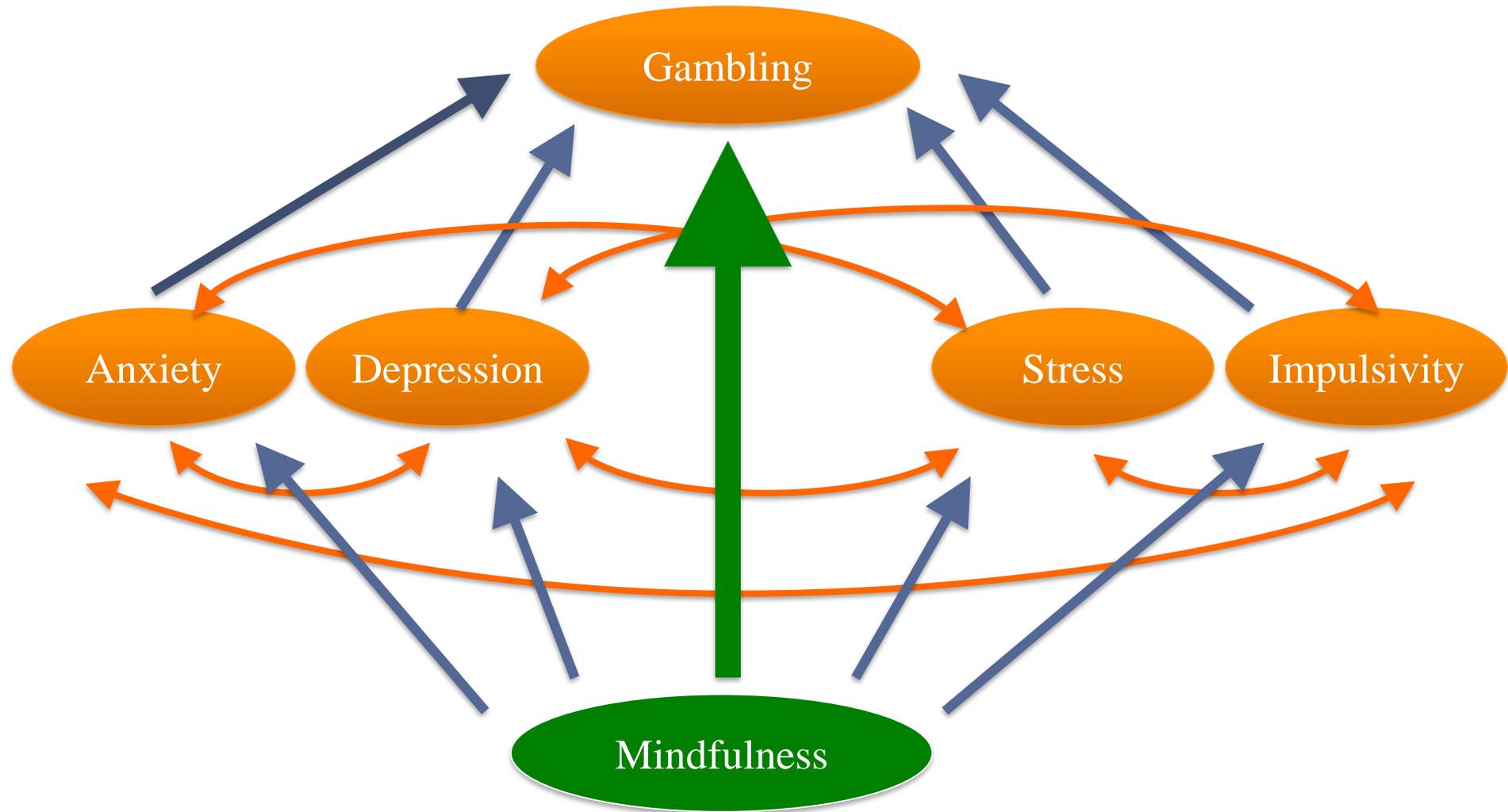
- Addictive cravings are powerful and can be intense
- Patients often get into a tug-of-war with cravings
- Patients often give special status to cravings
- Patients have an adversarial relationship with cravings



Reorganize relationship with craving to co-exist: Neither avoiding nor indulging, just being present in a non-judgmental, curious manner.



# Mindfulness and Gambling Disorders

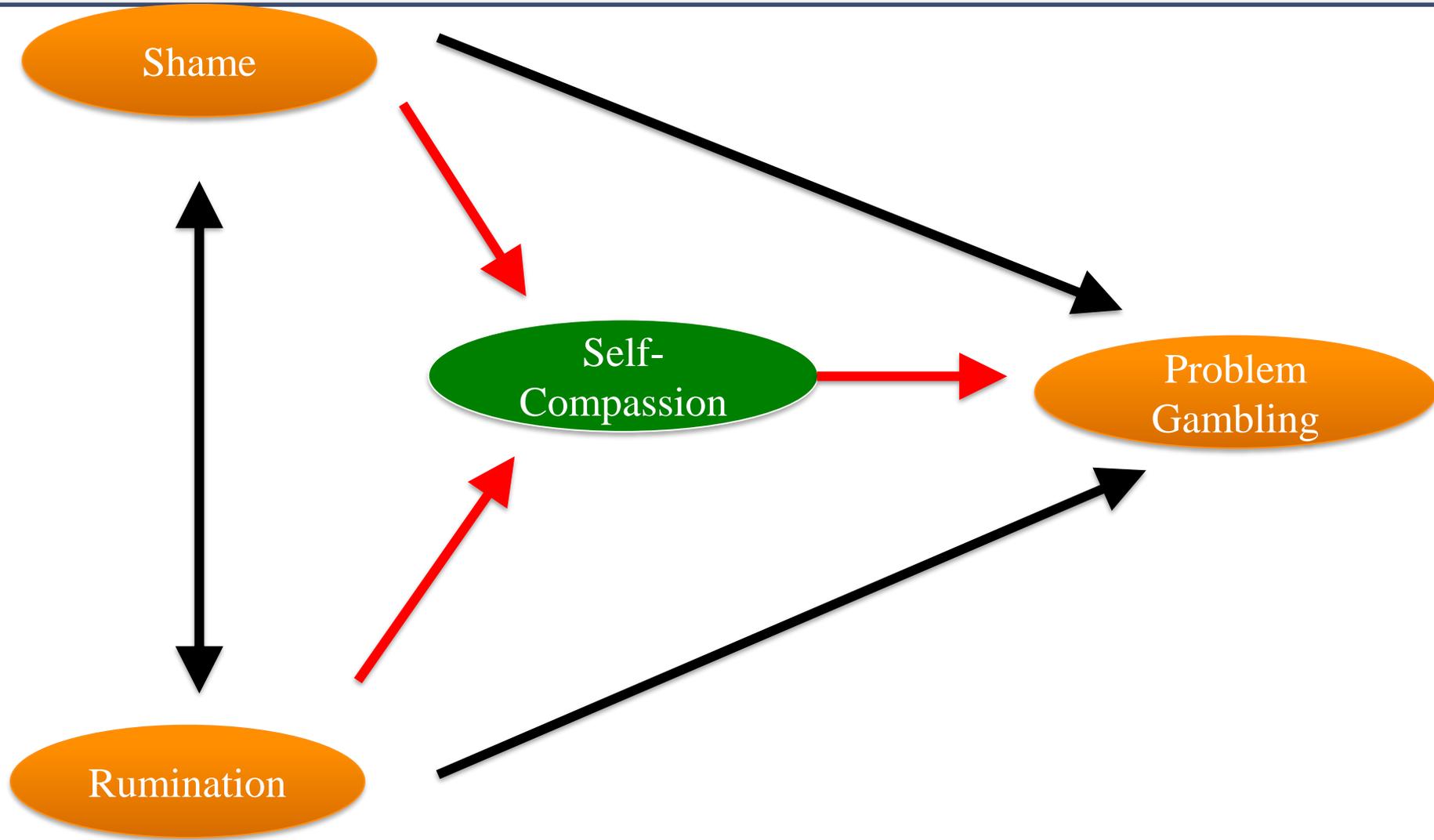


# Facets of Self-Compassion



Dr. Kristin Neff, University of Texas at Austin

# Mediating Effects of Self-Compassion on Problem Gambling



# Gambling Disorders and Mindfulness

## Mechanisms:

- Increased tolerance for uncomfortable feelings
- Increased stress coping
- Increased tolerance for cravings
- Attenuates impulsivity

Chen et al. *Asian Journal of Gambling Issues and Public Health* 2014, 4:2  
<http://www.ajgiph.com/content/4/1/2>

 Asian Journal of Gambling Issues  
and Public Health  
a SpringerOpen Journal

RESEARCH ARTICLE

Open Access

## Mindfulness and problem gambling treatment

Peter Chen<sup>1</sup>, Farah Jindani<sup>1</sup>, Jason Perry<sup>2</sup> and Nigel L. Turner<sup>1,3,4\*</sup>

\* Correspondence:  
nigel.turner@camh.ca  
<sup>1</sup>Problem Gambling Institute of  
Ontario, Centre for Addiction and  
Mental Health, Toronto, Canada  
<sup>3</sup>Social Epidemiological Research,  
Centre for Addiction and Mental  
Health, Toronto, Canada  
Full list of author information is  
available at the end of the article

### Abstract

Mindfulness originated from Buddhist contemplative practice 2500 years ago. Mindfulness has increasingly been integrated into a variety of health care programs to address issues such as chronic pain, mental health problems, and addictions. The purpose of this study was to evaluate the feasibility of teaching problem gamblers about mindfulness meditation as part of regular treatment for problem gambling. The study evaluated an 8-week mindfulness group program that included 17 clients from the Problem Gambling Institute of Ontario at the Centre for Addiction and Mental Health (88% male) using questionnaires that were distributed before the first group session and after the final group session. The evaluation was a mixed method design that included both qualitative and quantitative feedback about the group. All of the participants showed an improvement in their levels of mindfulness after the 8-week treatment program. The Mindfulness Attention Awareness Scale (MAAS) scores increased from a pre-test score of 3.65 ( $SD=1.01$ ) to a post-test score of 4.40 ( $SD=0.78$ ). Qualitative feedback about the group also highlighted a number of improvements in the clients' lives that included being more in control, relaxed and able to stay in the now. The results indicated that mindfulness was successfully taught during the 8-week group program. This study evaluated the suitability of mindfulness as an intervention as part of a problem gambling treatment service. However, the study did not evaluate whether mindfulness improved the clients' ability to resist relapse. Future studies are needed to examine the long-term impact of mindfulness sessions.

### Background

The concept of mindfulness originated from Buddhist contemplative practice approxi-



David Geffen  
School of Medicine

 UCLA Health System

**Being aware of mind wandering**: This is the practice of being *attentive, alert, and aware* of moments **when** your thoughts wander from the target stimuli (e.g. breathing). The more we practice being aware, the better we become in being aware sooner when thoughts wander and thus we are able to intervene in a more timely fashion. This reduces the amount of time spend being unaware and entertaining wandering thoughts. The moment we become aware of wandering thoughts is a mindful moment.



**Noticing where the mind has wandered:** Mind wandering can involve a variety of thoughts including planning thoughts, worrying thoughts, temptations, judging thoughts, making up stories in our minds, daydreaming, self-critical thoughts, etc... The practice of “noting” involves simply noticing where our mind has wandered. We don’t judge mind wandering, it is neither good nor bad. We simply just note the process with openness and curiosity.



**Letting go of tangential thoughts**: Once we note where the mind has wandered, we let go of the wandering thoughts whatever they may be. This practice of letting go is important, especially when our wandering thoughts might lure us to follow them, or make up narratives about them. We must remember, that mind wandering is the antithesis of being mindful. The more we practice letting go and refocusing our attention, the more proficient we will become in our ability to “let go” in real world situations.



**Refocusing attention**: This is the process of refocusing our attention on being present, moment by moment, and sustaining our attention on whatever target stimuli we have chosen. It is this practice of refocusing that we do again, and again throughout the process of being mindful.



# ADHD Treatments: Exercise

Regular vigorous aerobic exercise can offset stress, restlessness, and a vast array of other symptoms associated with ADHD, anxiety, and dysregulated mood disorders.<sup>3-4</sup> In consultation with your general physician, it is recommended that you engage in aerobic exercise 3-5 times weekly sufficient that you maintain 60-85% of your maximum target heart rate throughout your workouts.



5-7 Days Per Week     3-4 Days Per Week     1-2 Days a Week     A few times a month     Rarely/Never

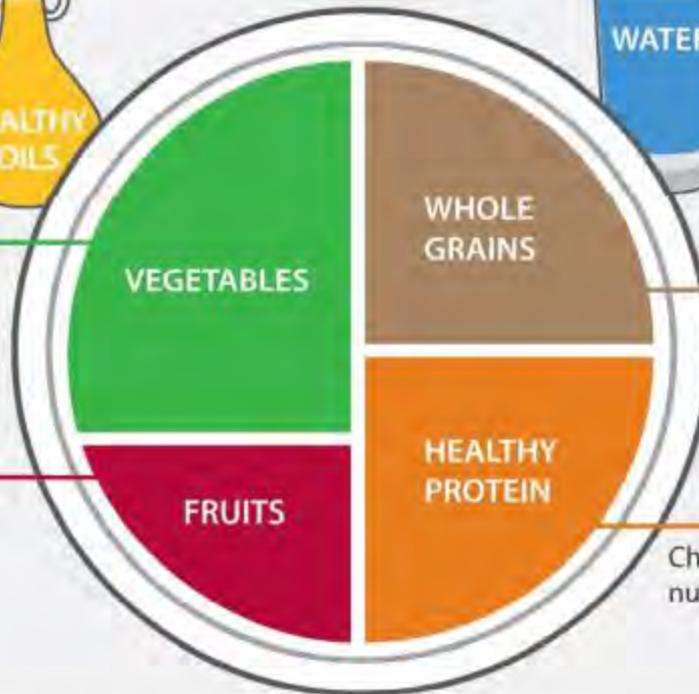
# HEALTHY EATING PLATE

Use healthy oils (like olive and canola oil) for cooking, on salad, and at the table. Limit butter. Avoid trans fat.



The more veggies – and the greater the variety – the better. Potatoes and French fries don't count.

Eat plenty of fruits of all colors.



Drink water, tea, or coffee (with little or no sugar). Limit milk/dairy (1-2 servings/day) and juice (1 small glass/day). Avoid sugary drinks.



Eat a variety of whole grains (like whole-wheat bread, whole-grain pasta, and brown rice). Limit refined grains (like white rice and white bread).

Choose fish, poultry, beans, and nuts; limit red meat and cheese; avoid bacon, cold cuts, and other processed meats.

© Harvard University



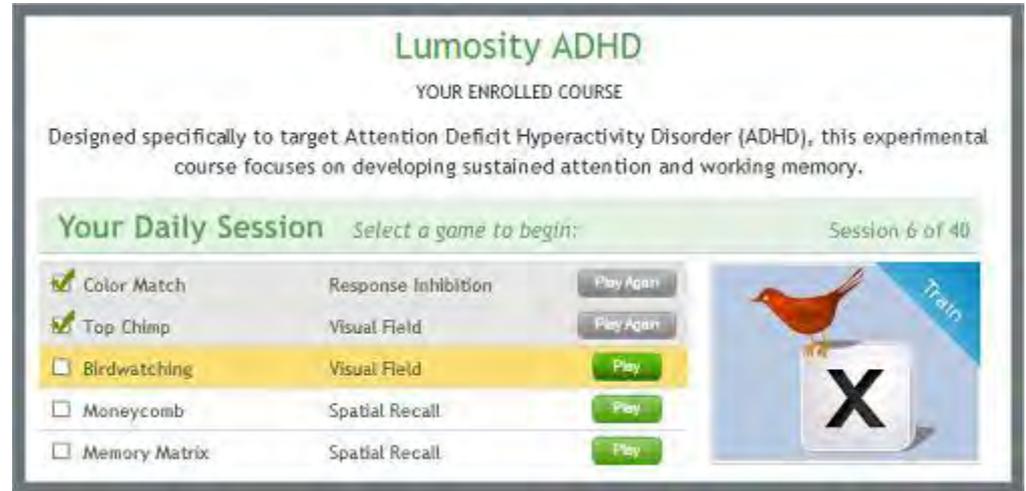
Harvard School of Public Health  
The Nutrition Source  
[www.hsph.harvard.edu/nutritionsource](http://www.hsph.harvard.edu/nutritionsource)

Harvard Medical School  
Harvard Health Publications  
[www.health.harvard.edu](http://www.health.harvard.edu)



# ADHD Treatments: Computer Programs

- Lumosity
- CogMed



David Geffen  
School of Medicine

**UCLA** Health System

# Treatments: Neurofeedback

CLINICAL EEG and NEUROSCIENCE

©2009

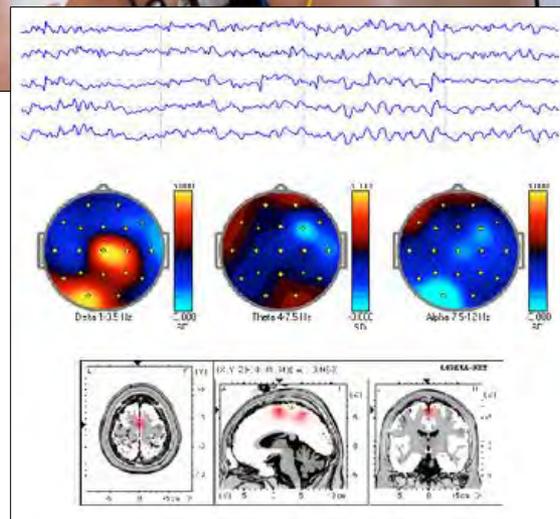
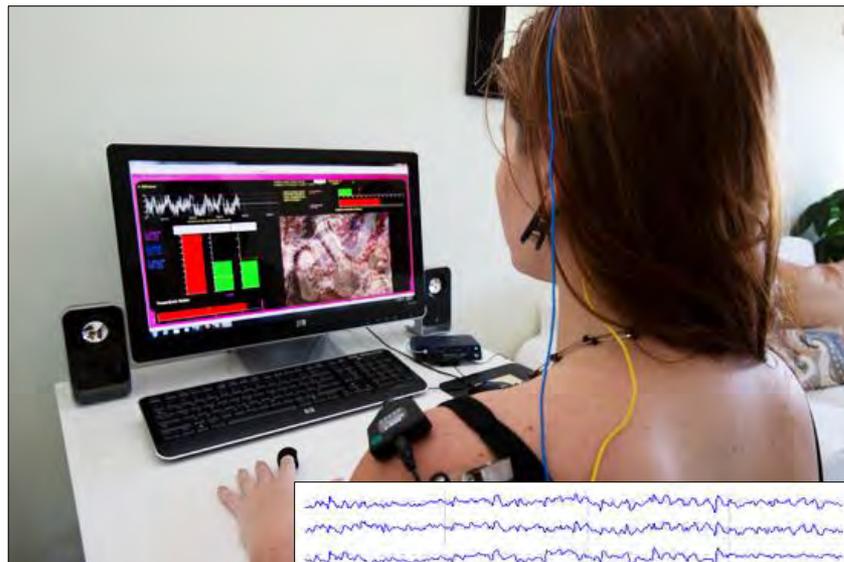
## Efficacy of Neurofeedback Treatment in ADHD: the Effects on Inattention, Impulsivity and Hyperactivity: a Meta-Analysis

Martijn Arns, Sabine de Ridder, Ute Strehl, Marinus Breteler and Anton Coenen

### Key Words

Attention Deficit Hyperactivity Disorder  
EEG Biofeedback  
Hyperactivity  
Impulsivity  
Inattention  
Meta-Analysis

SMR was enhanced and hyperactive symptoms increase was inhibited. Several variations of this training protocol developed and tested over the years such as enhancing inhibiting theta, enhancing SMR and inhibiting beta, etc. explanation of these different protocols also see Monastra  
In 2004, Heinrich et al. were the first to report positive Slow Cortical Potential (SCP) neurofeedback in the



David Geffen  
School of Medicine

UCLA Health System

Defer to Social Science Literature

Somewhat Better than Placebo

No Long Term Negative Effects



# ADHD and Problem Gambling: A Hidden Disorder

---

Rory C. Reid, Ph.D., LCSW  
Assistant Professor, Neuropsychology  
Research Psychologist  
Licensed Clinical Social Worker

---

Department of Psychiatry  
Resnick Neuropsychiatric Hospital  
University of California Los Angeles



David Geffen  
School of Medicine

California Department of  
**Public Health**

