

# ADHD / Substance Use Disorder

- ◆ Gregory X. Boehm MD, FASAM
- ◆ Medical Director: Y-Haven Residential Treatment for homeless Addicted Men
- ◆ Medical Director: Psych Services, MOMS IOP
- ◆ Assistant Professor of Psychiatry, CWRU Medical School
- ◆ 216-464-5700 Office
- ◆ gxboehm24@gmail.com

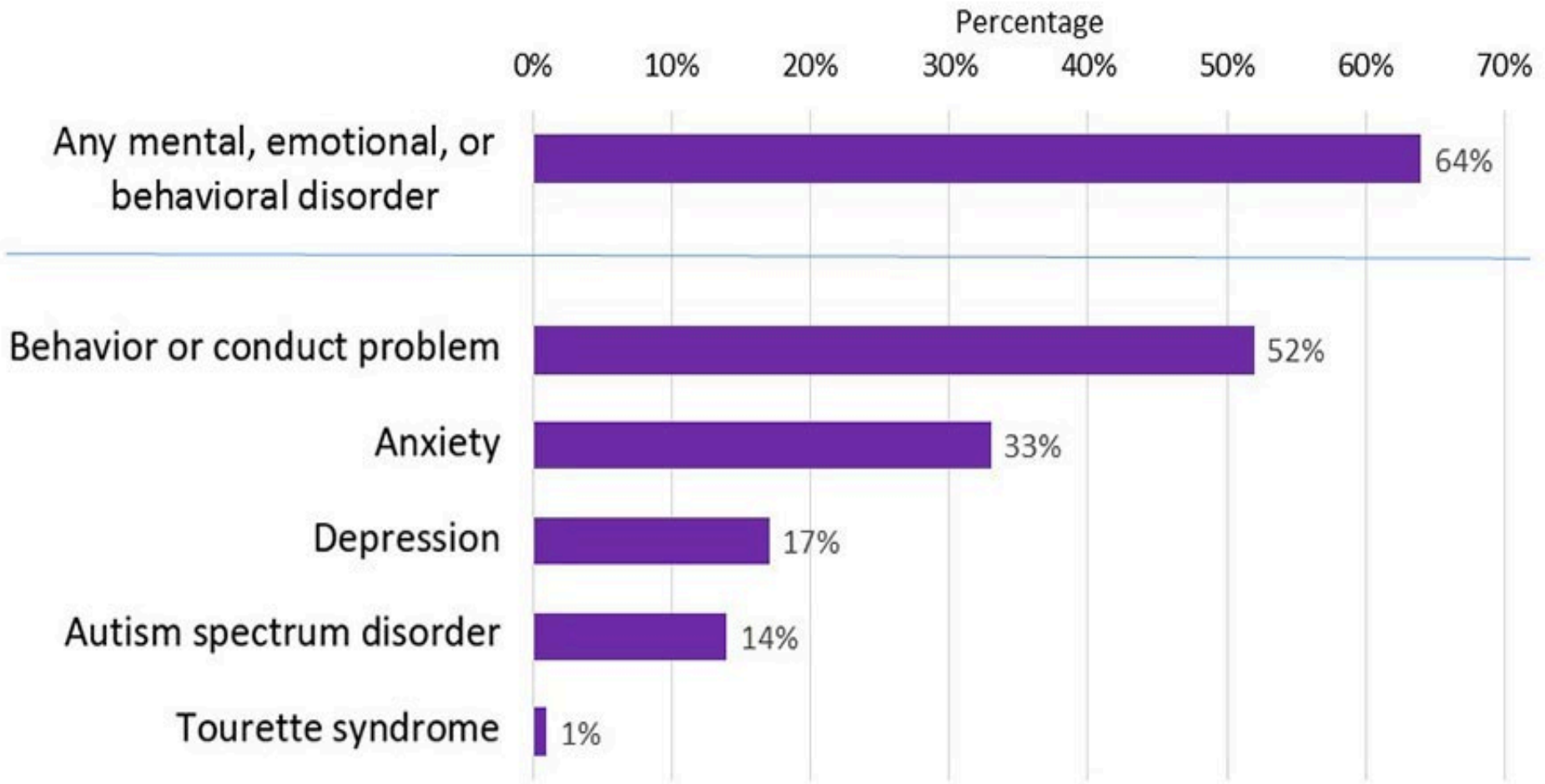
# OBJECTIVES

- ◆ 1) Risks of Untreated ADHD among SUD
- ◆ 2) Reliable Tools to Identify and Diagnose
- ◆ 3) Treatment for ADHD / SUD
- ◆ 4) Medication Management
- ◆ 5) Outcome Studies

# Overlapping Symptoms

- ◆ IMPULSIVE: act/talk without thinking
- ◆ DISTRACTED: Salience, Novelty-Seeking
- ◆ START MANY: Finish few
- ◆ RESTLESS: easily bored

# CDC: ADHD Co-occurring Dx



# INCREASED RISK OF SUD

- ◆ ADHD: Untreated: 2-3 x's risk of SUD, relapse
- ◆ MEN diagnosed 3 x's more than WOMEN
- ◆ EFFECTS BOTH EQUALLY
- ◆ HYPER more common in men
- ◆ INVISIBLE more common in women
- ◆ ADHD childhood, 60-70% persist into adulthood

# Auto Accidents: ADHD / SUD

- ◆ JAMA: May, 2017: Chang, Z, et al:
- ◆ Cohort study of 2,319,450 US drivers with ADHD: If Treated with ADHD medication:
- ◆ 38% fewer accidents among men, 42% fewer among women
- ◆ Treated ADHD + SUD: decrease was the same



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Includes waiver qualifying requirements

Neeleman founder of JetBlue Airways. His ADHD is both a weakness and a strength: “I have an easier time planning a 20-aircraft fleet than I do paying the light bill”





# STRENGTHS

- ◆ Attention to Variance
- ◆ Creative, Imaginative
- ◆ Network
- ◆ Multitasking
- ◆ Adaptability
- ◆ Higher Energy
- ◆ Resilience

# Who is at Risk?

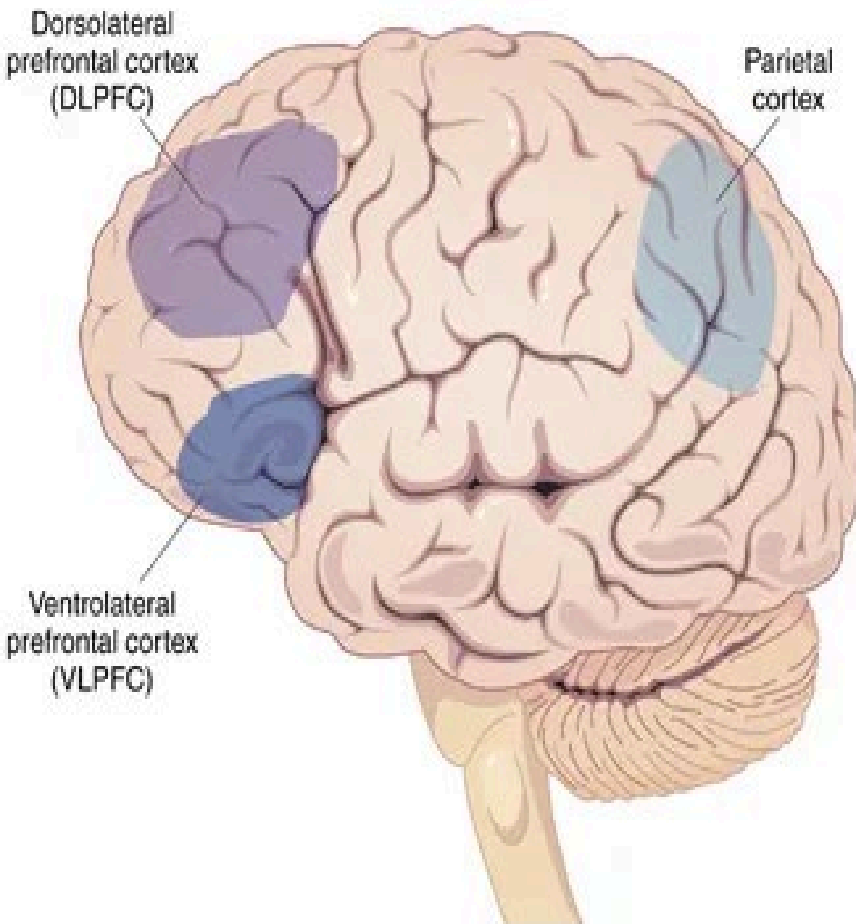
- ◆ Social Anxiety
- ◆ Risk taking
- ◆ Novelty Seeking
- ◆ Easily Bored
- ◆ Low frustration tolerance
- ◆ Hyperfocus
- ◆ Irritability / isolation

# Prevalence of ADHD / SUD

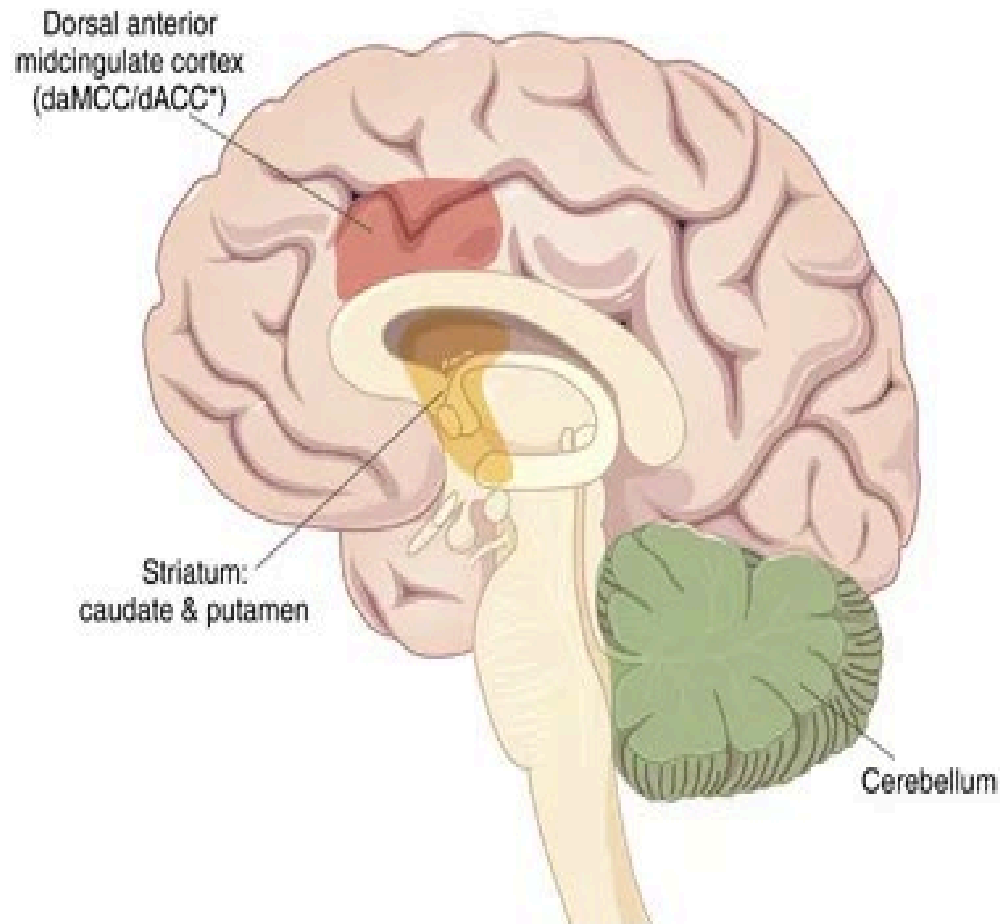
- ◆ Mariani J, Levin F, Am J Addict. 2007; 16(Suppl 1): 45–56. SAMSHA Fall 2015 • Volume 14 Issue 3
- ◆ “Treatment Strategies for Co-Occurring ADHD and SUD”
- ◆ Describe treatment scenarios in ADHD that are most likely to lead to SUD, exacerbate ongoing SUD, or minimize risks of SUD.
- ◆ 25% of Treatment –Seeking SUD Patients have untreated ADHD

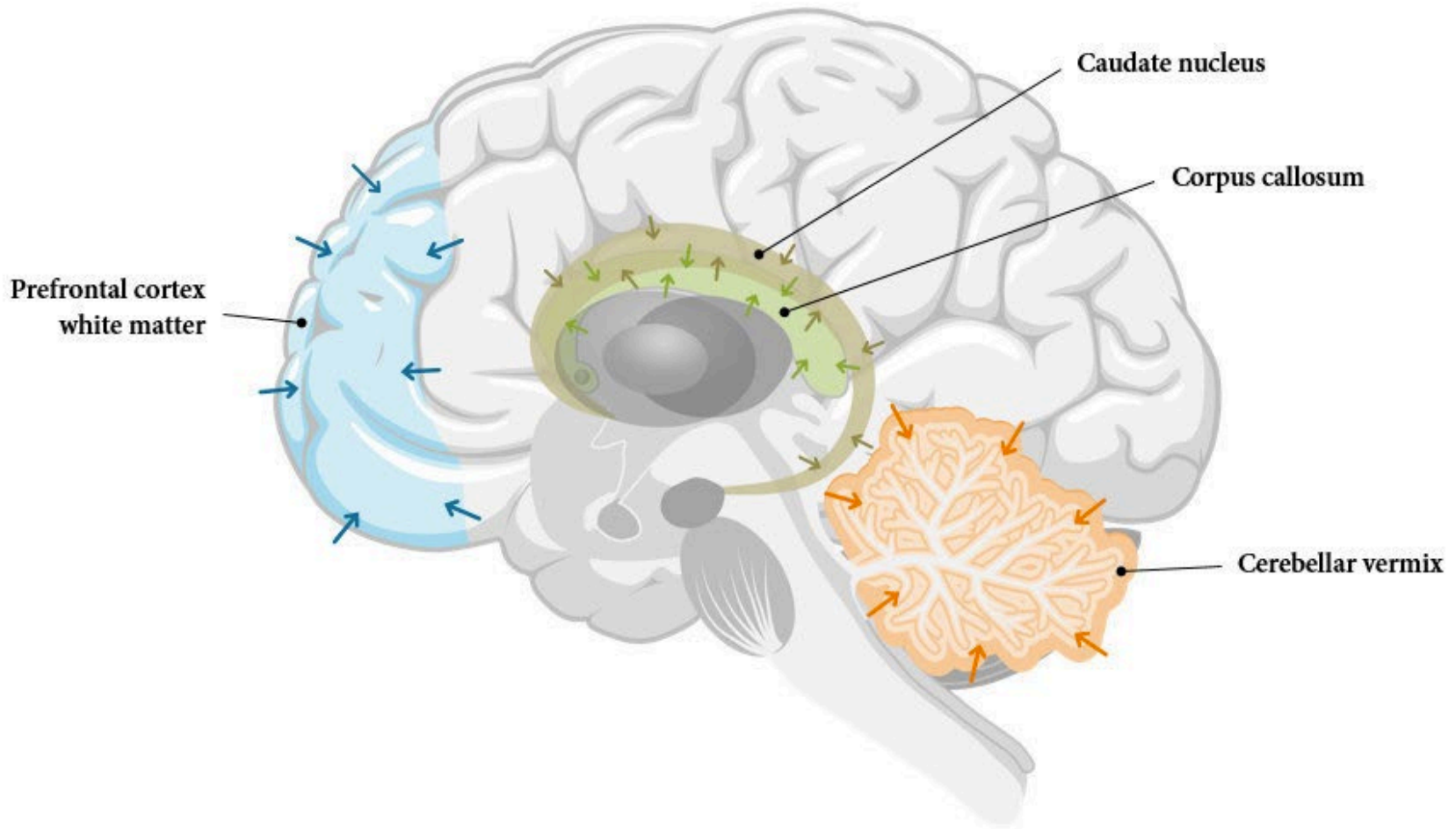
# NEURAL PATHWAYS

Lateral surface



Medial wall





**Reduction in caudate nucleus, prefrontal cortex white matter,  
corpus callosum and cerebellar vermis**

# NEURAL PATHWAYS

- ◆ EXECUTIVE FUNCTION, specifically INHIBITORY CONTROL: Basal Ganglia-Thalamic-Cortical pathway
- ◆ INHIBITORY CONTROL matches the maturity of this circuit
- ◆ DEFICIT in Anticipatory Reward: Can't wait

# HOW TO DIAGNOSE

- ◆ BARKLEY Screening Questionnaire:  
>4 positive Self and Family member

KIETH CONNERS Rating Scale:

DRIVEN TO DISTRACTION: Hallowell MD  
Filled out by Patient and Significant Other

## Adult ADHD Self-Report Scale (ASRS-v1.1) Symptom Checklist

Patient Name	Today's Date						
Please answer the questions below, rating yourself on each of the criteria shown using the scale on the right side of the page. As you answer each question, place an X in the box that best describes how you have felt and conducted yourself over the past 6 months. Please give this completed checklist to your healthcare professional to discuss during today's appointment.			Never	Rarely	Sometimes	Often	Very Often
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?							
Part A							
7. How often do you make careless mistakes when you have to work on a boring or difficult project?							
8. How often do you have difficulty keeping your attention when you are doing boring or repetitive work?							
9. How often do you have difficulty concentrating on what people say to you, even when they are speaking to you directly?							
10. How often do you misplace or have difficulty finding things at home or at work?							
11. How often are you distracted by activity or noise around you?							
12. How often do you leave your seat in meetings or other situations in which you are expected to remain seated?							
13. How often do you feel restless or fidgety?							
14. How often do you have difficulty unwinding and relaxing when you have time to yourself?							
15. How often do you find yourself talking too much when you are in social situations?							
16. When you're in a conversation, how often do you find yourself finishing the sentences of the people you are talking to, before they can finish them themselves?							
17. How often do you have difficulty waiting your turn in situations when turn taking is required?							
18. How often do you interrupt others when they are busy?							

Part B



# Adult ADHD Self-Report Scale (ASRS-v1.1) Symptom Checklist

Patient Name		Today's Date					
<p>Please answer the questions below, rating yourself on each of the criteria shown using the scale on the right side of the page. As you answer each question, place an X in the box that best describes how you have felt and conducted yourself over the past 6 months. Please give this completed checklist to your healthcare professional to discuss during today's appointment.</p>			Never	Rarely	Sometimes	Often	Very Often
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<p>10. How often do you misplace or have difficulty finding things at home or at work?</p>							
<p>11. How often are you distracted by activity or noise around you?</p>							

# TAKING CHARGE OF ADULT ADHD



**A foremost expert  
shows how you can:**

- Succeed at Work
- Develop Good Relationships
- Handle Your Finances
- Maintain a Healthy Lifestyle

*Author of the bestselling Taking Charge of ADHD*

**RUSSELL A. BARKLEY, PhD**  
with Christine M. Benton



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Use Disorder Course**

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# THRIVING with **ADHD** WORKBOOK for KIDS

**60** Fun Activities to Help Children  
Self-Regulate, Focus, and Succeed



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# Conners' Parent Rating Scale-Revised (S)

by C. Keith Conners, Ph.D.

Child's ID: \_\_\_\_\_ Gender: **M** **F**  
(Circle One)

Birthdate: \_\_\_\_ / \_\_\_\_ / \_\_\_\_ Age: \_\_\_\_ School Grade: \_\_\_\_  
Month Day Year

Parent's ID: \_\_\_\_\_ Today's Date: \_\_\_\_ / \_\_\_\_ / \_\_\_\_  
Month Day Year

**Instructions:** Below are a number of common problems that children have. Please rate each item according to your child's behavior in the last month. For each item, ask yourself, "How much of a problem has this been in the last month?", and circle the best answer for each one. If none, not at all, seldom, or very infrequently, you would circle 0. If very much true, or it occurs very often or frequently, you would circle 3. You would circle 1 or 2 for ratings in between. Please respond to each item.

	NOT TRUE AT ALL (Never, Seldom)	JUST A LITTLE TRUE (Occasionally)	PRETTY MUCH TRUE (Often, Quite a Bit)	VERY MUCH TRUE (Very Often, Very Frequent)
1. Inattentive, easily distracted .....	0	1	2	3
2. Angry and resentful .....	0	1	2	3
3. Difficulty doing or completing homework .....	0	1	2	3
4. Is always "on the go" or acts as if driven by a motor .....	0	1	2	3
5. Short attention span .....	0	1	2	3
6. Argues with adults .....	0	1	2	3
7. Fidgets with hands or feet or squirms in seat .....	0	1	2	3
8. Fails to complete assignments .....	0	1	2	3
9. Hard to control in malls or while grocery shopping .....	0	1	2	3
10. Messy or disorganized at home or school .....	0	1	2	3
11. Loses temper .....	0	1	2	3
12. Needs close supervision to get through assignments .....	0	1	2	3
13. Only attends if it is something he/she is very interested in .....	0	1	2	3
14. Runs about or climbs excessively in situations where it is inappropriate ..	0	1	2	3
15. Distractibility or attention span a problem .....	0	1	2	3
16. Irritable .....	0	1	2	3
17. Avoids, expresses reluctance about, or has difficulties engaging in tasks that require sustained mental effort (such as schoolwork or homework) .	0	1	2	3
18. Restless in the "squirmy" sense .....	0	1	2	3
19. Gets distracted when given instructions to do something .....	0	1	2	3
20. Actively defies or refuses to comply with adults' requests .....	0	1	2	3
21. Has trouble concentrating in class .....	0	1	2	3
22. Has difficulty waiting in lines or awaiting turn in games or group situations	0	1	2	3
23. Leaves seat in classroom or in other situations in which remaining seated is expected .....	0	1	2	3
24. Deliberately does things that annoy other people .....	0	1	2	3
25. Does not follow through on instructions and fails to finish schoolwork, chores or duties in the workplace (not due to oppositional behavior or failure to understand instructions) .....	0	1	2	3
26. Has difficulty playing or engaging in leisure activities quietly .....	0	1	2	3
27. Easily frustrated in efforts .....	0	1	2	3



**MHS**

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 In Canada, 3770 Victoria Park Ave., Toronto, ON M2H 3M6, 1-800-268-6011, 1-416-492-2627, Fax 1-416-492-3343.



**OBSERVER**

N:

Your Name: unse

Gender: **M** F  
(Circle One)

Age: 37

Gender: **M** **F**  
Circle One (optional)

Age: \_\_\_\_\_  
(optional)

Today's Date: 12/5/18 I am this person's:  spouse  parent  sibling  other: \_\_\_\_\_  
Month Day Year

M1 = Males 18 to 29 years of age  
M2 = Males 30 to 39 years of age  
M3 = Males 40 to 49 years of age  
M4 = Males 50 years of age or older

- A. Inattention/Memory Problems
- B. Hyperactivity/Restlessness
- C. Impulsivity/Emotional Lability
- D. Problems with Self-Concept
- E. DSM-IV Inattentive Symptoms
- F. DSM-IV Hyperactive-Impulsive Symptoms
- G. DSM-IV ADHD Symptoms Total
- H. ADHD Index

T	A				B				C				D				E				F				G				H				T
	M1	M2	M3	M4	M1	M2	M3	M4	M1	M2	M3	M4	M1	M2	M3	M4	M1	M2	M3	M4	M1	M2	M3	M4	M1	M2	M3	M4	M1	M2	M3	M4	
90	-	-	-	36	-	-	-	33+	-	-	-	-	-	-	-	27	27	-	-	24+	24+	54	54	46+	46+	-	36	36	32+	90			
89	-	-	-	-	-	-	-	32	-	-	-	-	-	-	-	-	26	26	-	-	23	23	53	53	45	45	-	35	-	31	89		
88	-	-	-	35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	52	52	44	44	36	-	35	30	88		
87	36	-	-	34	-	-	-	31	-	-	-	-	-	-	-	25	25	27	27	22	22	-	-	-	-	-	35	34	34	-	87		
86	-	-	-	-	-	-	-	-	-	-	36	-	-	-	-	-	-	-	-	-	-	-	51	51	43	43	-	33	-	29	86		
85	35	-	-	33	-	-	-	30	-	-	35	-	-	-	27	27	24	24	26	26	-	-	50	50	42	42	34	-	33	-	85		
84	34	36	-	32	-	-	36	29	-	-	34	-	-	-	-	-	-	-	-	21	21	49	49	41	41	33	32	32	28	84			
83	-	35	-	-	36	-	35	-	-	36	-	-	-	-	26	26	23	23	25	25	-	-	48	48	40	40	-	3	-	27	83		
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66	-	23	24	20	24	24	22	18	-	23	23	21	-	12	-	14	14	-	-	13	13	31	31	25	25	-	20	-	17	66			

# CHALLENGES

- ◆ TIME MANAGEMENT
- ◆ OVER COMMITMENT: Too much is never enough
- ◆ RELAXATION / RECREATION / HOBBY:
- ◆ FIND Non-Chemical way first
- ◆ COMBAT FATALISM: “why try at all? Confront “All-or-nothing” attitude.

# Hollowell 50 Tips: Adult ADHD

- ◆ TIME MANAGEMENT: Pacing one self
- ◆ COMMIT to a GOAL: “ In next 30 min, what can I reasonably expect to accomplish”

ANNOUNCE IT, say it out loud, jot it down, set a timer. After 30 min, assess % accomplished. And take a break.



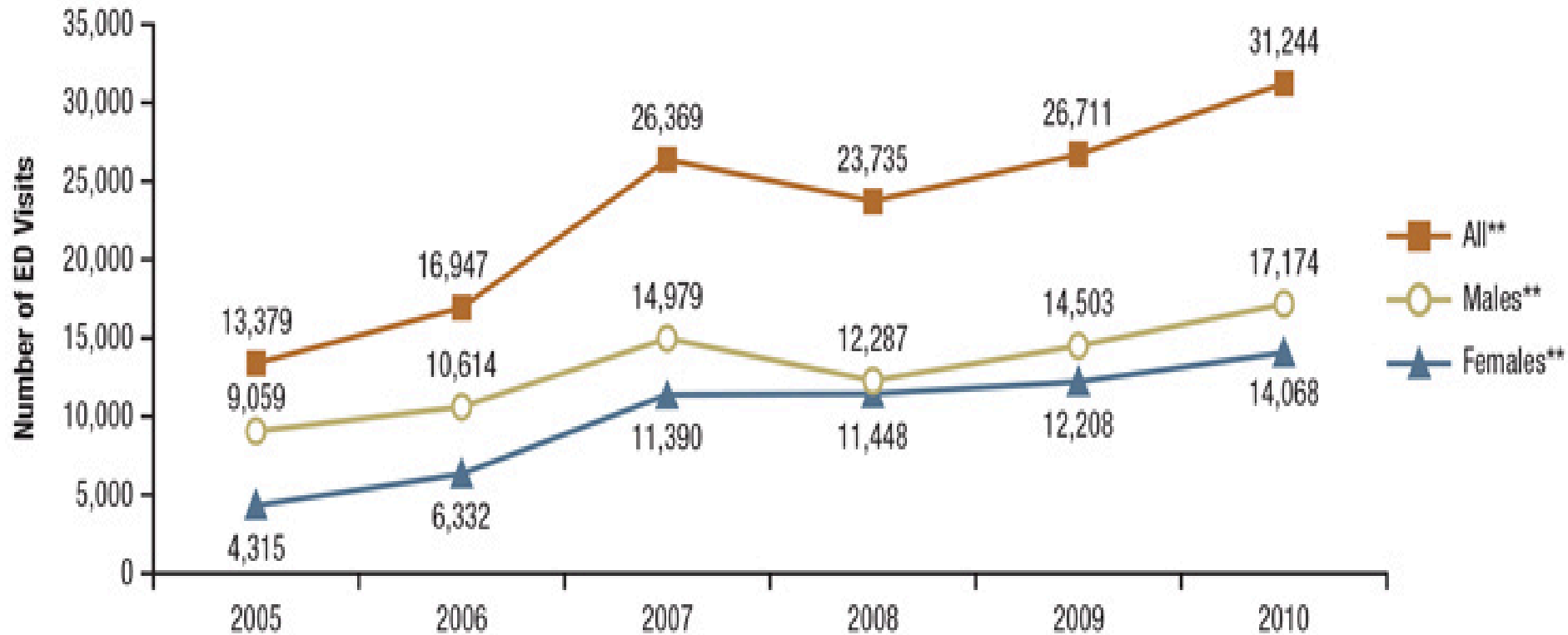
# CHALLENGES & TRIGGERS

- ◆ Workaholism
- ◆ Boredom
- ◆ OCD Habits: Gambling, Compulsive Shop Lifting
- ◆ Semblance of a “buzz” feeling is a potential trigger

# NON-STIMULANT Rx

- ◆ ALPHA -2 AGONISTS:
  - ◆ GUANFACINE 1-2 mg qd, advance to 4-5 mg qd
  - ◆ CLONIDINE .1 mg-.2 mg qd
  
- ◆ ANTI-DEPRESSANTS:
  - ◆ BUPROPRION XL 300 mg qd
  - ◆ ATOMOXETINE 40 mg—80mg qd

# ER Visits: Stimulants



\* Because gender is unknown in a small number of visits, estimates for males and females do not add to the total.

\*\* The change from 2005 to 2010 is statistically significant at the .05 level.

Source: 2005 to 2010 SAMHSA Drug Abuse Warning Network (DAWN).

# STIMULANT Rx

- ◆ FOCALIN: least side effects: d-ISOMERS:
- ◆ Dexamethylphenidate: Specific Binding: PET SCAN dopamine transporter in basal ganglia: BLOCKS re-uptake of Dopamine
- ◆ ELIMINATES l-ISOMER: widespread, non-specific binding: cause of side effects
- ◆ LEAST IRRITABILITY, sleep/appetite disturbance

# STIMULANTS

- ◆ FOCALIN : d-dexmethylphenidate
- ◆ RITALIN: methylphenidate
- ◆ CONCERTA: methylphenidate
- ◆ ADDERALL: dextroamphetamine salts
- ◆ VYVANSE: Long-acting  
lisdexamfetmatine

# MEASURE EFFECTIVENESS

- ◆ CHALLENGING BOOK not inherently appealing
- ◆ FICTION vs NON-FICTION
- ◆ COMPARE: # PAGES read in 30 min:
  - ◆ before medicine and after starts working
- ◆ SET A TIMER
- ◆ 50% more pages read: 7 before, then 10+ after

# READING RESULT

- ◆ BOOK: \_\_\_\_\_ (Challenging: Fiction vs Non-Fiction, the Opposite of Preferred)
  
- ◆ RESULTS:
- ◆ Without Rx: STARTED: \_\_\_\_\_ FINISHED: \_\_\_\_\_
- ◆ With Rx: STARTED: \_\_\_\_\_ FINISHED: \_\_\_\_\_

# MONITOR

- ◆ Ask significant other to monitor / supervise Rx
- ◆ Prove to self: Increased Attention
- ◆ “Do not monitor by the feeling” it will develop tolerance, chasing it will become abusive
- ◆ Return to half hour reading to assess
- ◆ Ask significant other to rate progress



# SIGNIFICANT OTHER REPORT

- ◆ BARKELY QUESTIONNAIRE
- ◆ TASK ORIENTED: \_\_\_\_\_
- ◆ SELECTED TASK: \_\_\_\_\_
- ◆ REDIRECTABLE: \_\_\_\_\_

# Celebrities with SUD & ADHD

- ◆ Russell Brandon
- ◆ Michael Phelps
- ◆ Justin Timberlake
- ◆ Paris Hilton
- ◆ Britney Spears

# Anxiety Medication

- ◆ Propranolol 10-20 mg bid
- ◆ Atenolol 50 mg qd
- ◆ Buspirone 10-15-30 mg bid
- ◆ Clonidine .1-.2 mg bid
- ◆ Prazosin 1 mg hs
- ◆ Taper off Benzos

# Relaxation Exercises

- ◆ Allaboutdepression.com: 4 techniques:

- ◆ “4 Square” Deep Slow 4 Breaths/min

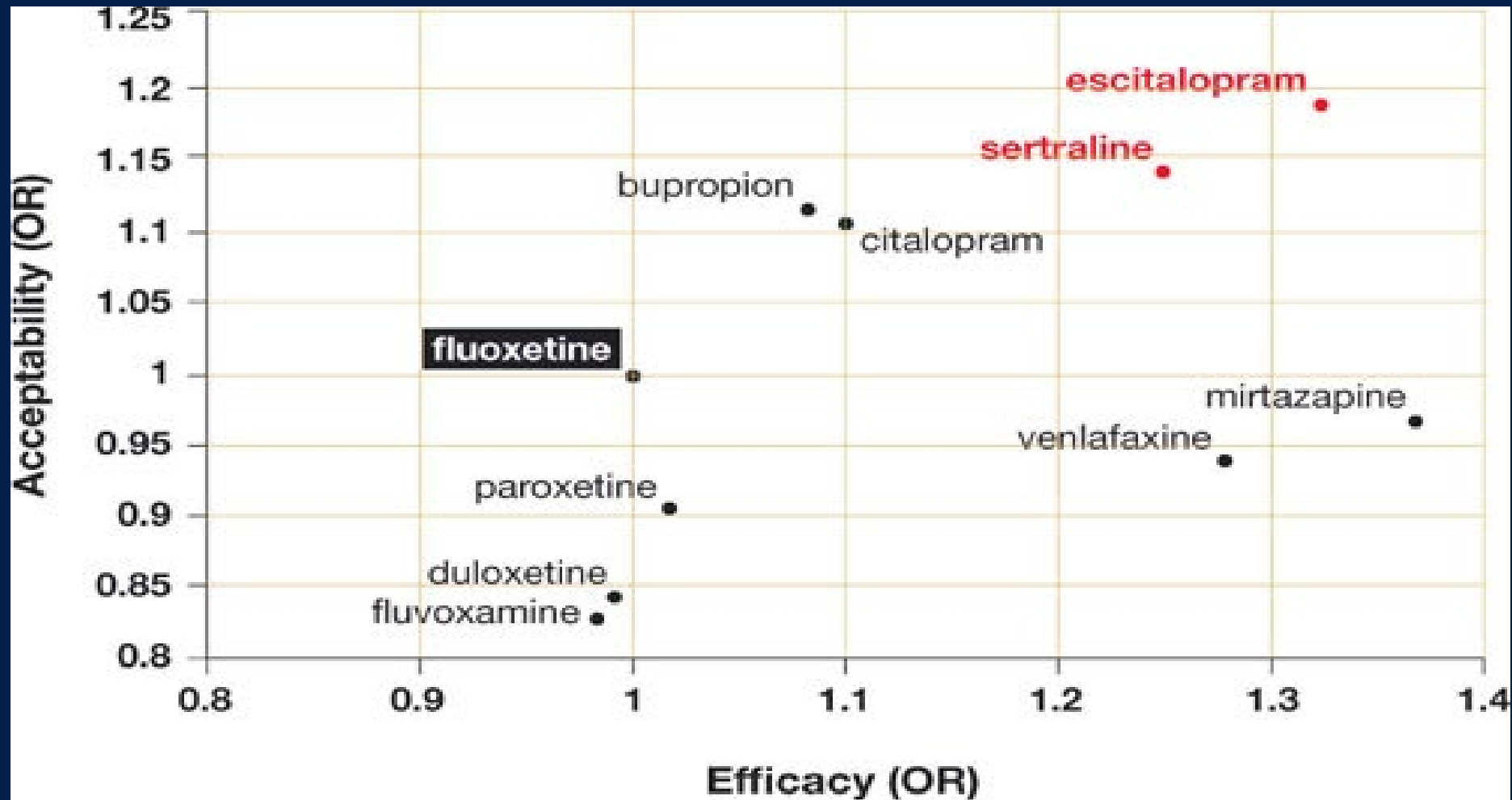
Progressive muscle relaxation

Guided Imagery

Mindfulness: Detach and Observe

“I have 20 things I am procrastinating on and you want me to sit here for 2 minutes and do nothing?”

# ANTI-DEPRESSANTS



# TMS, CPT

- ◆ Trans Magnetic Stimulation:  
Approved 4/19 FDA
- ◆ Requires Nightly Tx for 8 weeks
- ◆ Continuous Performance Task  
training

# Balance: Work/Family/Leisure

- ◆ Most Challenging: Addicted to “Productivity”
- ◆ “Busy-aholic” Boredom is a trigger
- ◆ Have to find a non-chemical, non-work, social leisure, hobby
- ◆ Hobby? Ever? “No, Never”
- ◆ So choose: Art, Sports, Music, Crafts, Reading, Journaling, + Exercise

# Example: PAINTING

- ◆ 45 yo woman, struggling in treatment, loses daughter OD, finally referred to higher level of care, and returns, more motivated to 12 Step
- ◆ “Can I have a picture of your granddaughter: I would like to paint it”
- ◆ Using pastels, and not having painted in 15 years:







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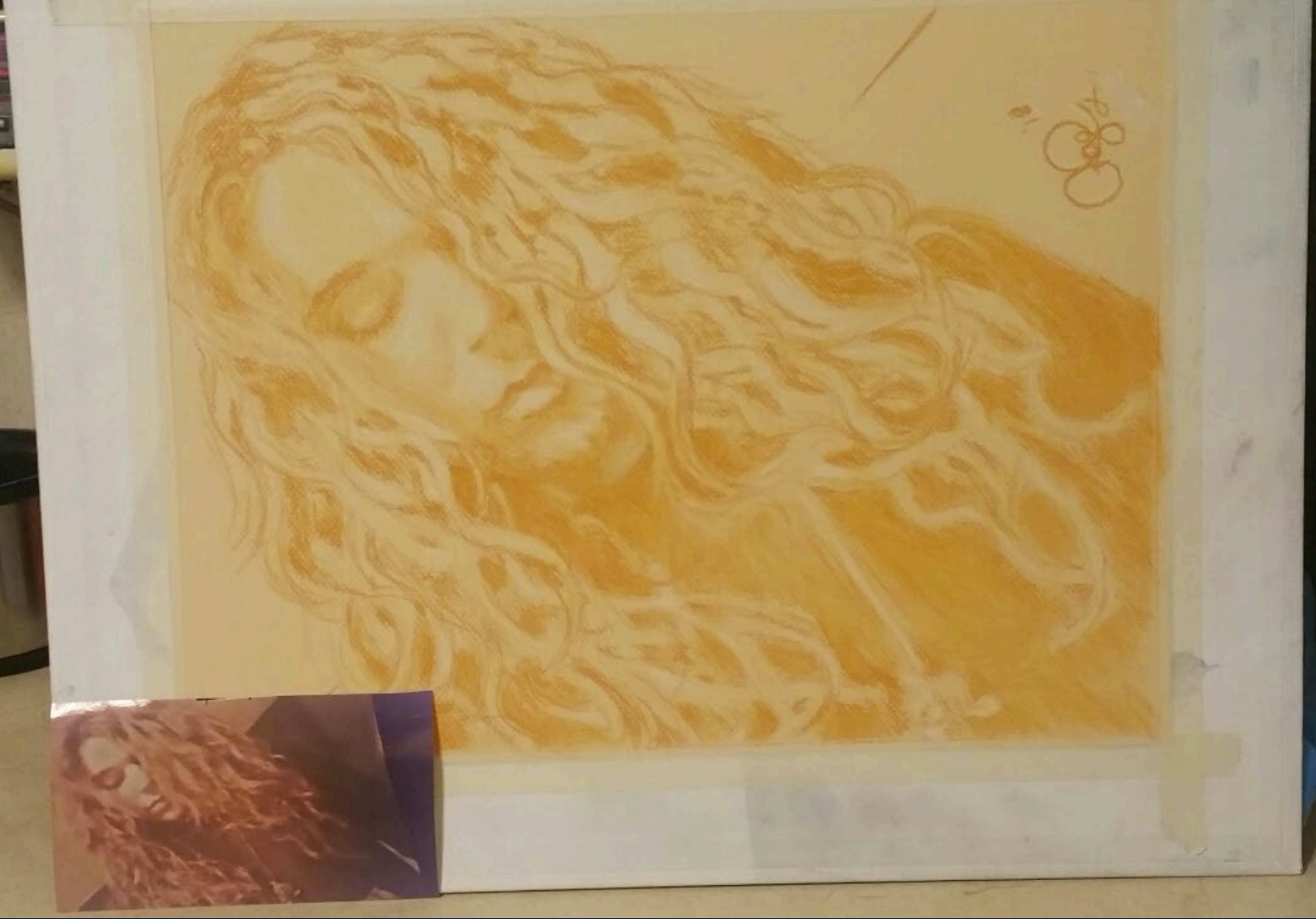
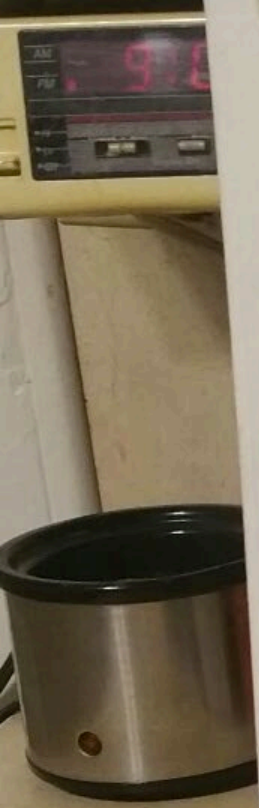
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# REFERENCES

- ◆ Cheng, Z. et al, “Association of MVA with Medication Treated ADHD vs Untreated ADHD” JAMA: 2017, 74(6), 597-503
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