



UW PACC

Psychiatry and Addictions Case Conference

UW Medicine | Psychiatry and Behavioral Sciences

ADHD, PERFORMANCE ENHANCEMENT, OR COSMETIC NEUROLOGY: CLINICAL AND ETHICAL ISSUES

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SPEAKER DISCLOSURES

- ✓ Consultant: Supernus
- ✓ Genomind
- ✓ Myriad Neuroscience
- ✓ Medici

These relationships have been mitigated.

OBJECTIVES

1. Review history of stimulant treatment and ADHD
2. Discuss diagnostic process and dilemmas leading to misdiagnosis, underdiagnosis, and overdiagnosis
3. Review ethical Issues
4. Highlight impairment and therapeutic options

CHARLES BRADLEY (1937)

- “...a spectacular change in behavior...remarkably improved school performance...a large proportion became subdued without losing interest in their surroundings.”
- Bradley, C. & Bowen, E. (1937). The behavior of children receiving benzedrine. *American Journal of Psychiatry*, 94, 577-585
- Bradley, C. (1950). Benzedrine and dexedrine in the treatment of children's behavior disorders. *Pediatrics*, 5, 24-37



“Birth of stimulant medications”

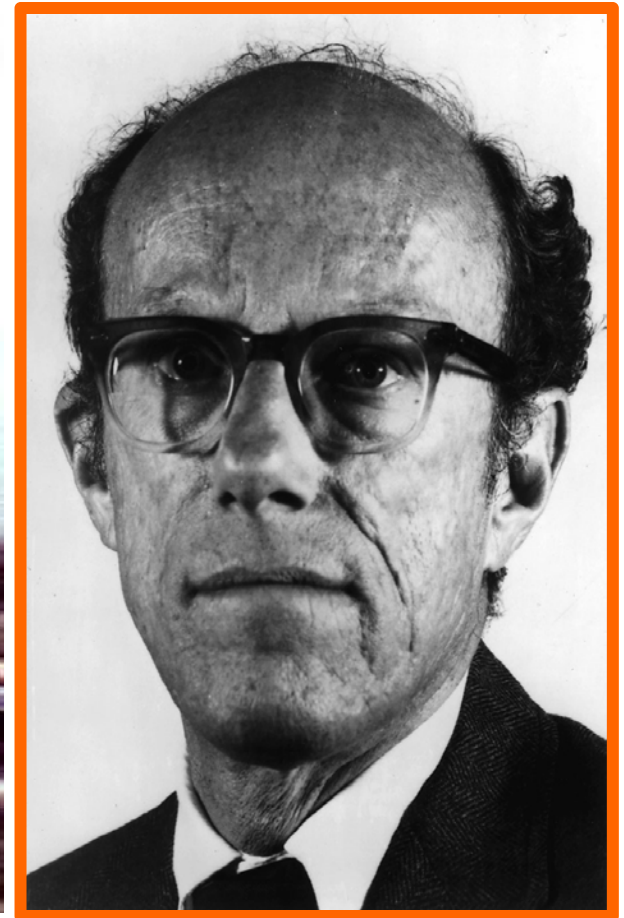
HISTORY OF MEDICINE TRIVIA: WHAT IS THIS WOMAN'S FIRST NAME AND WHAT DOES SHE HAVE TO DO WITH ADHD?

- Meet Rita, as in “Ritalin”
- In 1944 her husband, Leandro Panizzon of Swiss company CIBA (now Novartis) invented methylphenidate to help Rita improve her athletic performance

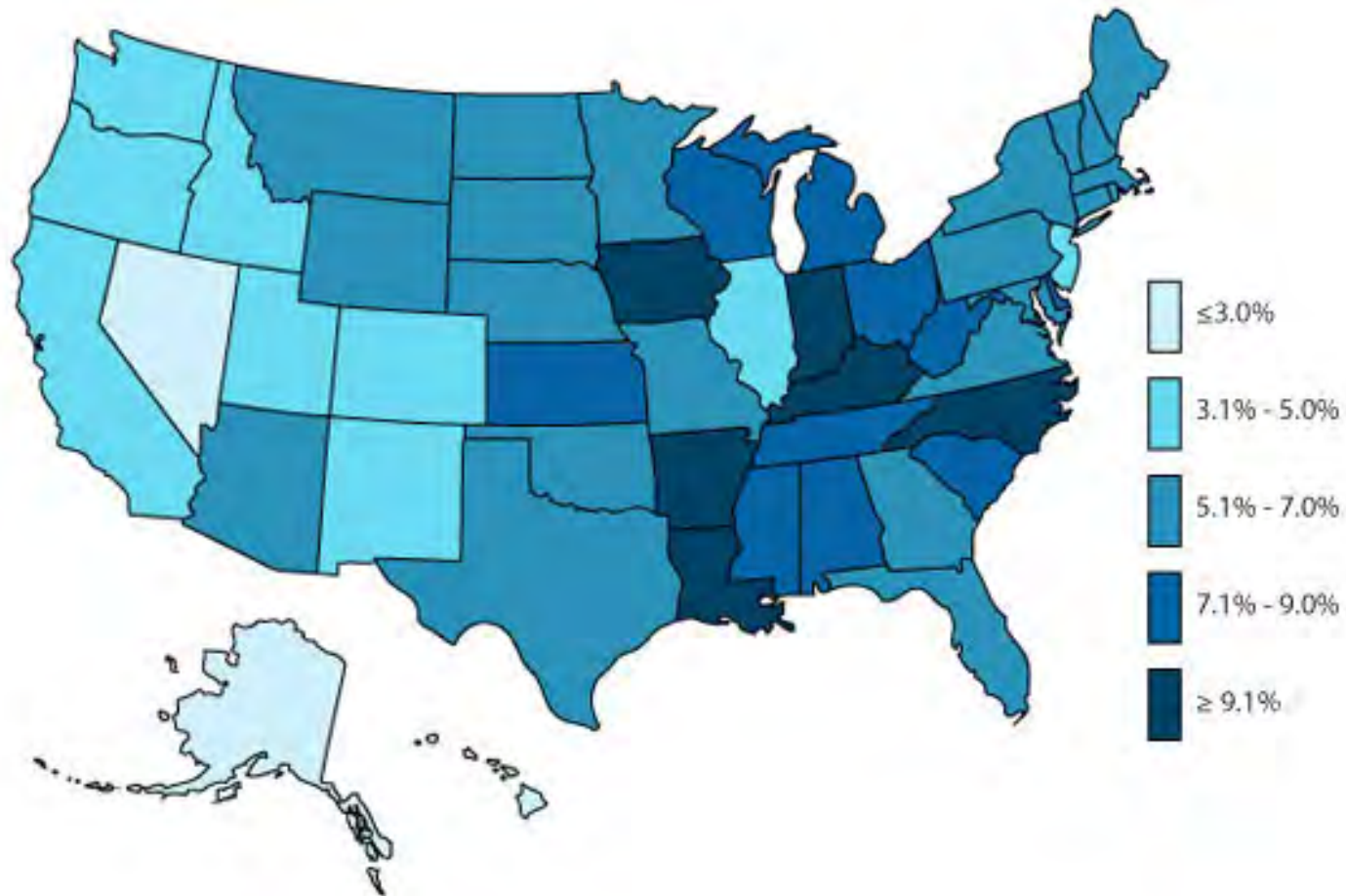


FIRST CONTROLLED METHYLPHENIDATE TRIALS (1963)

“The decrease in impulsivity...is compatible with the hypothesis that methylphenidate enhances the action of inhibitory controlling systems... However, a second mechanism-- increased alerting--is probably active here...”

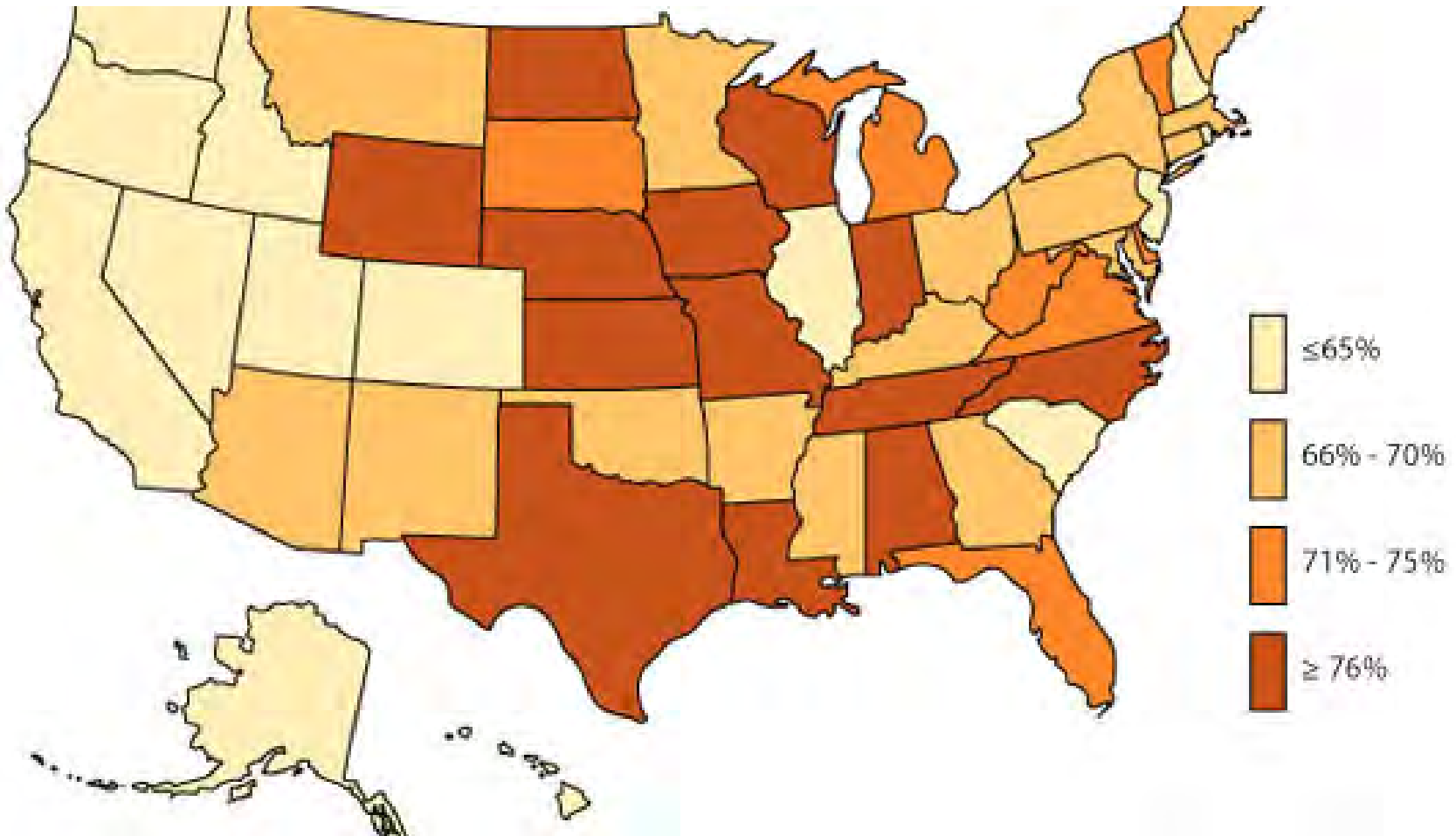


**PERCENT OF YOUTH AGED 4-17 YEARS CURRENTLY TAKING MEDICATION FOR ADHD
BY STATE: NATIONAL SURVEY OF CHILDREN'S HEALTH
2011 (VISSER , CDC)**

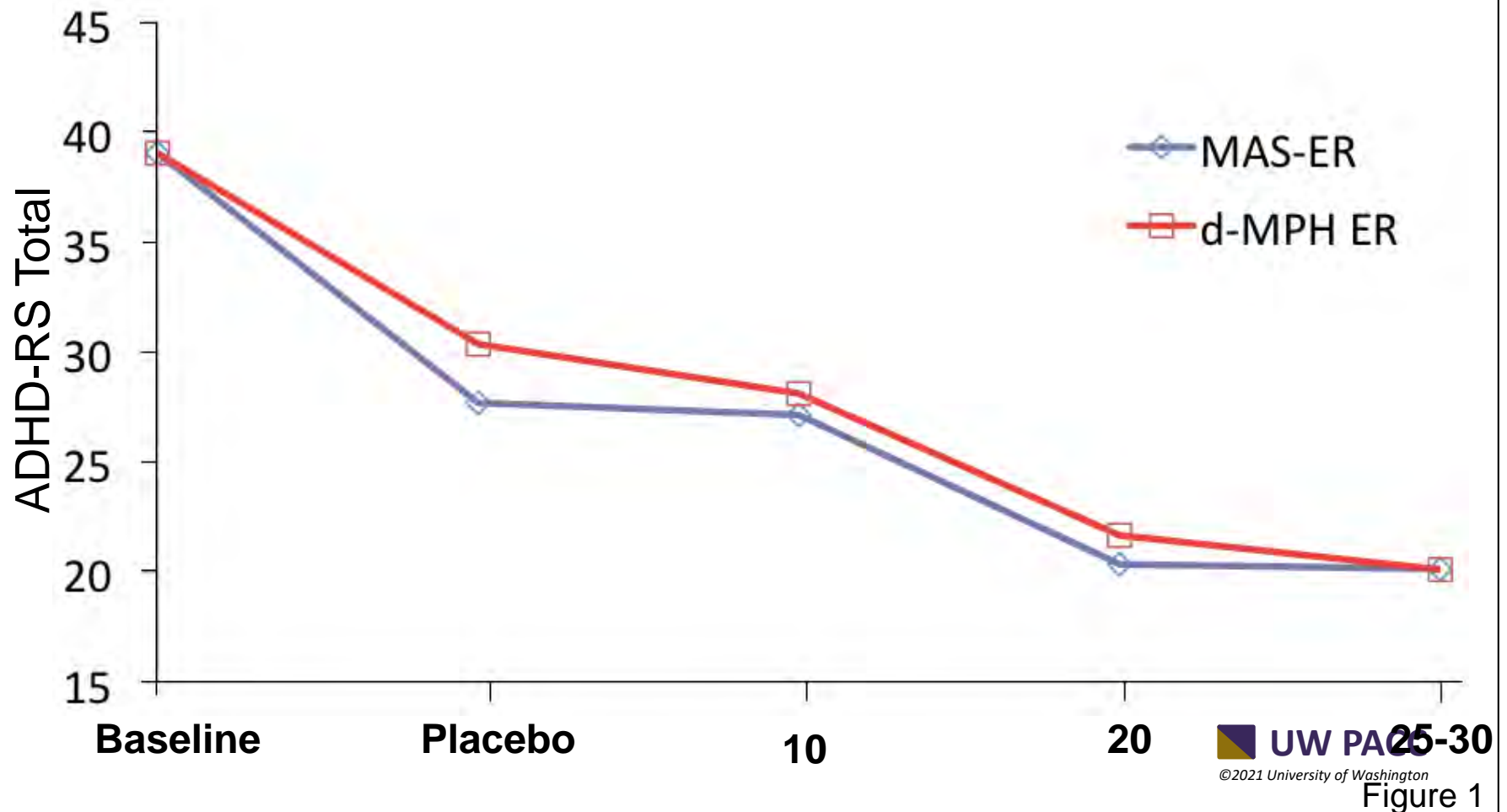


PERCENT OF YOUTH AGED 4-17 CURRENTLY WITH ADHD RECEIVING MEDICATION
TREATMENT BY STATE: NATIONAL SURVEY OF CHILDREN'S HEALTH

2011 (VISSER ET AL)



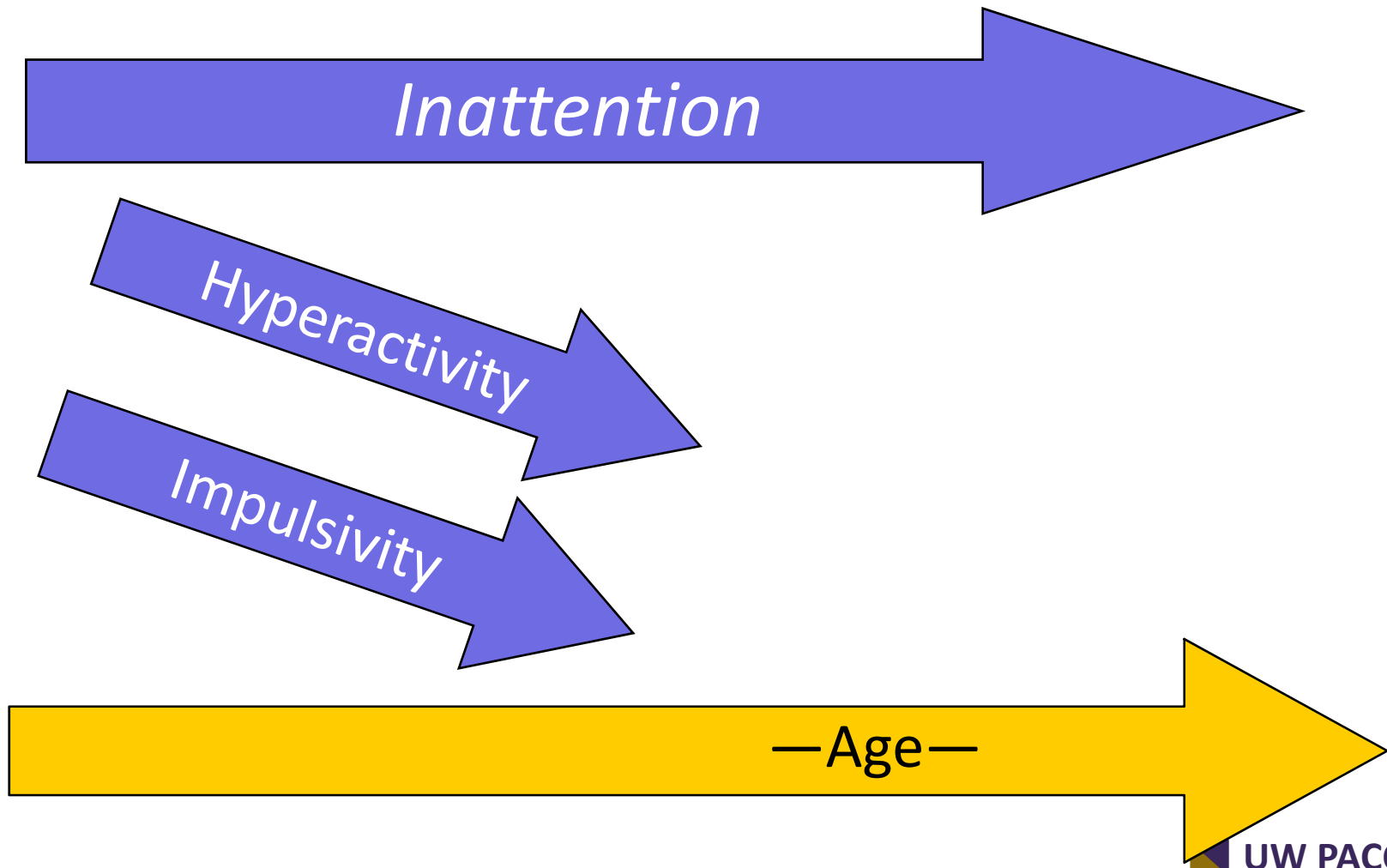
Sleep and Tolerability (SAT) :ER MAS vs. ER D-MPH (JCAP, 2011)



TREATMENT BEGINS WITH AN EVALUATION AND A DIAGNOSIS...

- Current **S**ymptoms (DSM V)
 - Screening does not = diagnosis
- **I**mpairment (e.g., academic/vocational, social adaptive and executive functioning)
- **M**imics
 - Psychiatric
 - Biological
 - Social
- Co-**M**orbidities and Associated Problems (Psychiatric, Developmental, Medical)
- **S**trengths (Social, Cognitive, Familial)
- Diagnostic Process: A Personalized Approach (Nayakkara, Hans, & Stein MA. Assessment of ADHD. L Adler, T. Spencer, T. Wilens: *ADHD in Children, Adolescents and Adults*. Cambridge University Press (2014))

ADHD: COURSE OF THE DISORDER



MEDICAL MIMICS

(PEARL, WEISS, AND STEIN, 2002 & 2014)

- Sensory impairments (hearing, vision, motor)
- Sleep deprivation, poor nutrition (breakfast)
- Medication effects (e.g., steroids, anticonvulsants)
- Chronic and acute illness (hypothyroidism, seizures)
- Genetic syndromes (Fragile X, Williams)
- Environmental toxins (Pb, FAE)
- Post-traumatic encephalopathy
- Constipation/encopresis

LACK OF AWARENESS OF SOCIAL MIMIC OR EXACERBATING FACTORS– MOST COMPLEX

Poor fit between temperament, expectations

Beverly Hills, Glencoe, Mercer Island, Potomac ADHD

Marital dissatisfaction/conflict

Montessori schools, home schooling,

Chaotic environments

COVID-19

COMMON DIAGNOSTIC PITFALLS

Truncated evaluation-e.g. “positive Vanderbilt”

- Confusion of symptoms versus diagnosis
- Rater Bias -False positive and False negative
 - Parents, fathers, teachers
 - Self report bias

Over-extensive evaluations

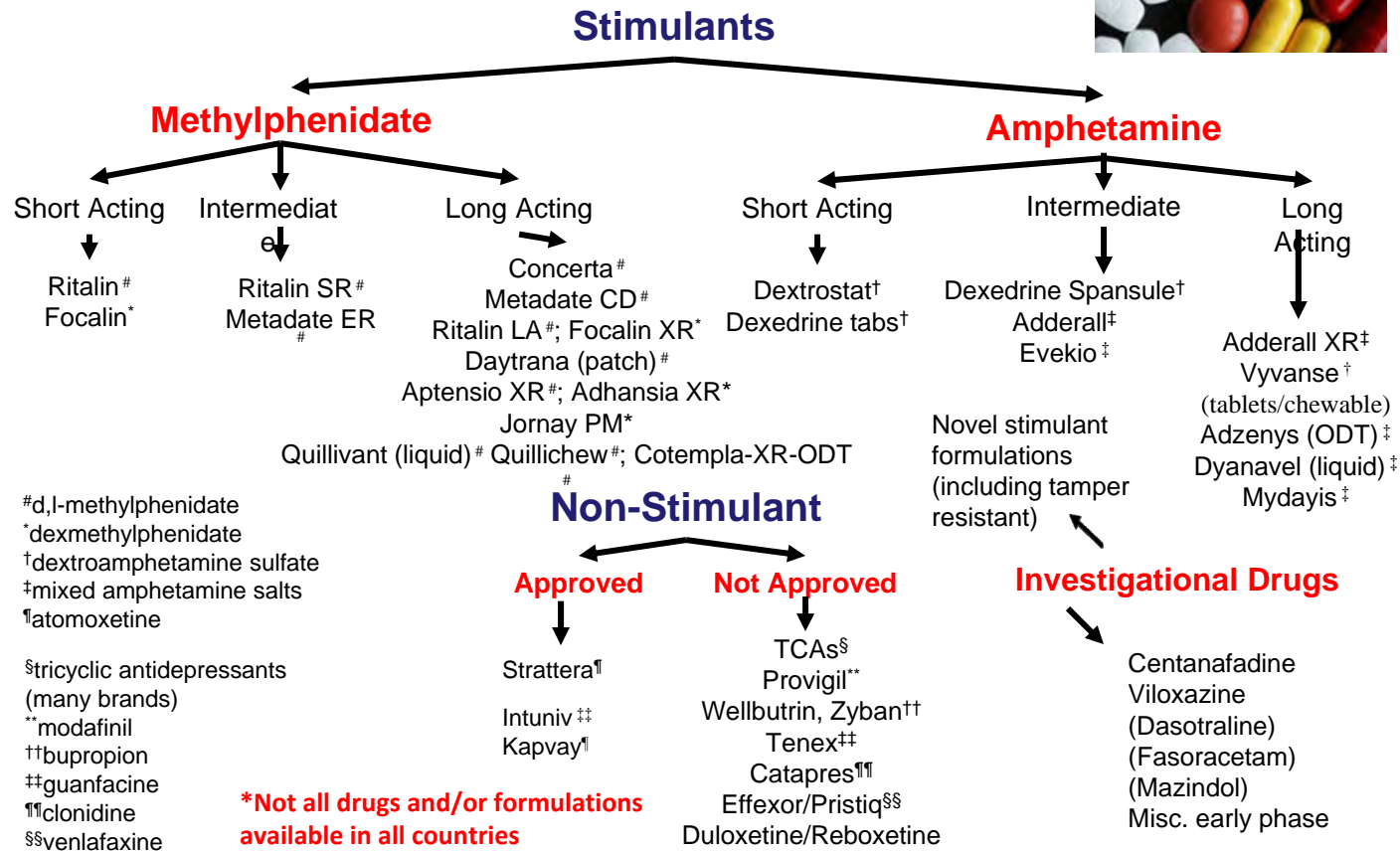
- no correction for multiple comparisons
- Interviews with prompts
- Neuropsychological evals

Un-validated etiological assumptions

- Is it ADHD in the presence of trauma history or ETOH exposure not ADHD?
- TBI

Failure to re-evaluate over time

ADHD MEDICATIONS WORLDWIDE* (APPROVED AND INVESTIGATIONAL)



#d,l-methylphenidate
 *dexamethylphenidate
 †dextroamphetamine sulfate
 ‡mixed amphetamine salts
 ¶atomoxetine

§tricyclic antidepressants (many brands)
 **modafinil
 ††bupropion
 ‡‡guanfacine
 ¶¶clonidine
 §§venlafaxine

Comparative efficacy and tolerability of medications for attention-deficit hyperactivity disorder in children, adolescents, and adults: a systematic review and network meta-analysis

Samuele Cortese, Nicoletta Adamo, Cinzia Del Giovane, Christina Mohr-Jensen, Adrian J Hayes, Sara Carucci, Lauren Z Atkinson, Luca Tessari, Tobias Banaschewski, David Coghill, Chris Hollis, Emily Simonoff, Alessandro Zuddas, Corrado Barbui, Marianna Purgato, Hans-Christoph Steinhausen, Farhad Shokraneh, Jun Xia, Andrea Cipriani

Summary

Background The benefits and safety of medications for attention-deficit hyperactivity disorder (ADHD) remain controversial, and guidelines are inconsistent on which medications are preferred across different age groups. We aimed to estimate the comparative efficacy and tolerability of oral medications for ADHD in children, adolescents, and adults.

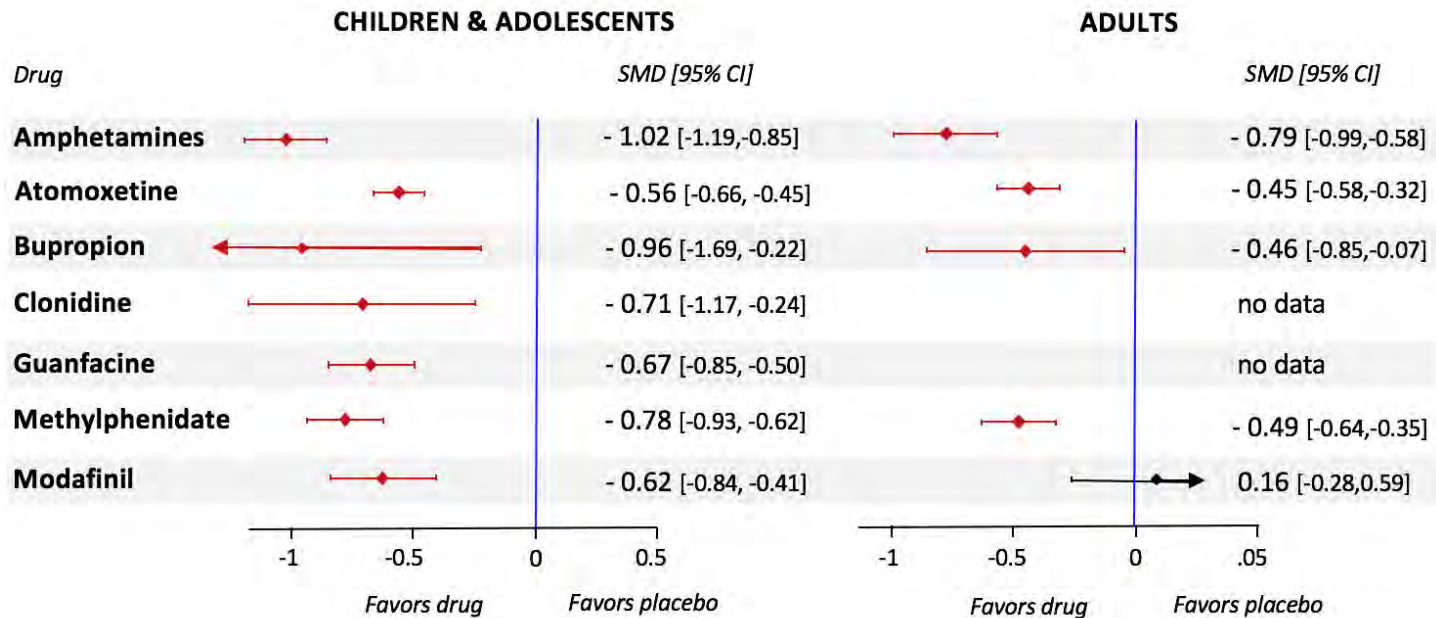
Cortese et al., Lancet Psychiatry 2018



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DRUGS VS PLACEBO- 12 WEEKS

Mean change in ADHD symptoms - rated by clinicians



QUESTIONS

- How do you decide to treat when the impairment is mild or unclear?
- Should we, and what are the costs/risks of using meds when other treatments are not available
- Should we continue treating those who are doing well and may not need medication?
- Should we treat beyond well?
- Should we be treating subclinical ADHD or performance enhancement only for those who ask?
- Is treating some patients fair to others who do not have access to resources, including evaluation, ADHD medications, or accommodations?
- Is the risk-benefit ratio for performance enhancement different than for mild ADHD?

EMILY

- Dr. and Mrs. Jones want you to see their 10-year old daughter
 - ✧ Does well in school and is in a gifted and talented program
 - ✧ Has been taking an intermediate duration stimulant since third grade
 - ✧ After school, she does competitive gymnastics 4 days/week, 2 days/week, performance declining in regional competitions
 - ✧ she spends 2 hours/night doing homework
- Her parents note that she resists practicing her piano and does not excel in all her studies
 - ✧ They would like to increase her medication
 - ✧ ADHD ratings are positive from parents, but not from teachers
- You meet with her, she looks tired and she starts describing how she is disappointing her parents and starts to cry

. WHAT WOULD YOU RECOMMEND?

- Continue to follow and monitor for impairment (e.g self esteem)
- Treat with stimulant medication
- Do something else (504 plan, tutoring, career counseling, psychotherapy, coaching)
- Complimentary or Alternative treatment with some efficacy
 - Supplement
 - Exercise
 - Caffeine
- Other

JARED

- 17-year-old boy with 3.9 GPA at a suburban public school
- taking MAS since 8th grade
- 31 on ACT, not good enough for Ivy League
- wants a 34
- already gets test accommodations

WHAT WOULD YOU RECOMMEND?.

- Continue to follow and monitor for impairment (e.g self esteem)
- Treat with stimulant medication
- Do something else (504 plan, tutoring, career counseling, psychotherapy, coaching)
- Complimentary or Alternative treatment with some efficacy
 - Supplement
 - Exercise
 - Caffeine

SOPHIE-14 YEAR OLD FRESHMAN

- 50 mg. LDX, 10 mg MAS at 4
- Always an A student and talented soccer player
- 8th grade, grades declined, demoted in soccer, family arguments, COVID restrictions, negative mood symptoms
- Parents “walking on eggshells”

WHAT WOULD YOU RECOMMEND?.

- Continue to follow and monitor for impairment (e.g self esteem)
- Treat with stimulant medication
- Do something else (504 plan, tutoring, career counseling, psychotherapy, coaching)
- Complimentary or Alternative treatment with some efficacy
 - Supplement
 - Exercise
 - Caffeine

NO DX

Richard, -27 year old recent law school graduate studying for bar and working

“ I know I don’t meet diagnostic criteria for ADHD, but I sometimes have trouble concentrating and staying organized, and it would help me to have some Ritalin on hand for days when I really need to be on top of things at work.”

WHAT WOULD YOU RECOMMEND?.

- Continue to follow and monitor for impairment (e.g self esteem)
- Treat with stimulant medication
- Do something else (504 plan, tutoring, career counseling, psychotherapy, coaching)
- Complimentary or Alternative treatment with some efficacy
 - Supplement
 - Exercise
 - Caffeine

JOHN

- 17-year-old at public high school
- has 1.7 GPA
- Says can't pay attention in class or get hw done, has 3 inattentive symptoms on parent Vanderbilt Scale, 1 on teacher
- would like to go to college
 - school not concerned, will not do evaluation
 - no insurance coverage for evaluation
- single parent family with limited finances
- pediatrician calls and wonders about trying a stimulant

QUESTIONS

- How do you decide to treat when the impairment is mild or unclear?

**THERAPEUTIC DILEMMAS INCREASE
WHEN DX CRITERIA ARE NOT MET,
IMPAIRMENT IS UNCLEAR, OR LIMITED
ACCESS TO TREATMENT.**

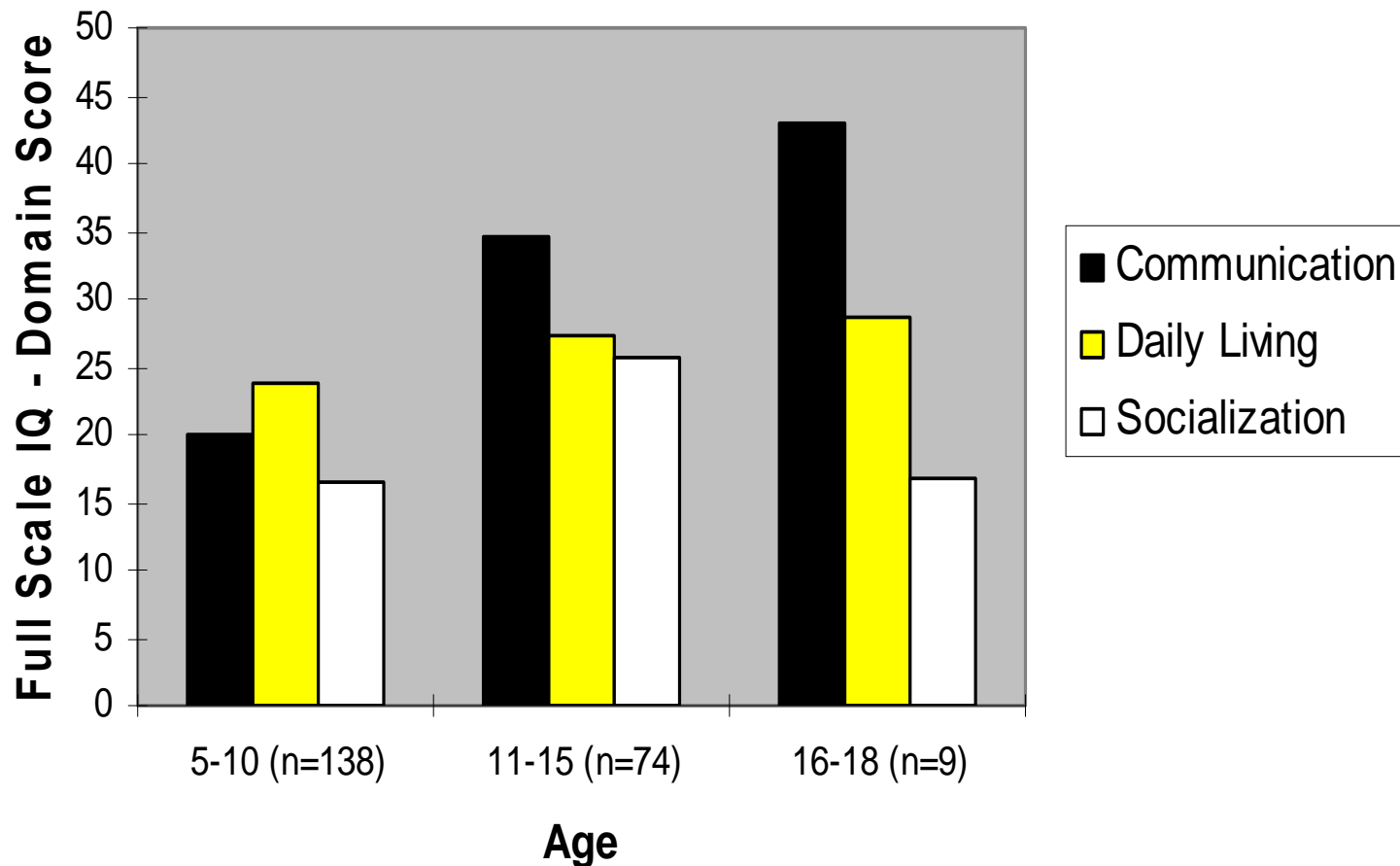
CENTRAL ROLE OF IMPAIRMENT IN TREATMENT

- **Impairment**--that is, problems in daily life functioning that result from symptoms--rather than symptoms themselves--is what should be targeted in treatment
- Therefore, **assessment of impairment** in daily life functioning is a fundamental aspect of **initial evaluation**
- **Ongoing assessment** of impairment in critical domains is necessary to determine the impact of and need for modifications in treatment
- Normalization or **minimization of impairment** in daily life functioning is the **goal of treatment**

COMMON MEASURES OF IMPAIRMENT

- Academic Underachievement
 - GPA
 - Achievement tests (WIAT, WJ, WRAT, KTEA)
 - Discrepancy between achievement and ability
- Executive Functioning
 - Neuropsychological tests
 - Poor ecological and diagnostic validity
 - Scales
 - ADHD symptoms embedded
- Adaptive Functioning (Vineland, ABAS)

VABS Adaptive Skills Dysfunction



Stein, M. A., Szumowski, E., Blondis, T. A., & Roizen, N. J. (1995). Adaptive skills dysfunction in ADD and ADHD children. *Journal of child psychology and psychiatry, and allied disciplines*, 36(4), 663-670.

MEASURES OF FUNCTIONAL IMPAIRMENT IN ADHD (SASSER, SCHOENFELDER, STEIN,CNS DRUGS 2017)

Measure	Rater	# of items	Subscales	Sensitive to medication / behavioral treatment?	Languages	Availability
ADHD-FX	Parent or teacher	32 for parent, 19 for teacher	Academic, peer, family, overall	No data available	English, Spanish	Upon request
Barkley Functional Impairment Scale (BFIS)	Parent	15	Overall, home-school, community-leisure	No data available	English	Purchase
Impairment Rating Scale (IRS)	Parent or teacher	7 for parent, 5 for teacher	Academic, peer, siblings, parents, family, self-esteem, overall	Yes	English	Public

WEISS FUNCTIONAL IMPAIRMENT RATING SCALE – PARENT REPORT (WFIRS-P)



Your name: _____ Relationship to child: _____

Circle the number for the rating that best describes how your child's emotional or behavioural problems have affected each item in the last month.

		Never or not at all	Sometimes or somewhat	Often or much	Very often or very much	n/a
A	FAMILY					
1	Having problems with brothers & sisters	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
2	Causing problems between parents	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
3	Takes time away from family members' work or activities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
4	Causing fighting in the family	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
5	Isolating the family from friends and social activities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
6	Makes it hard for the family to have fun together	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
7	Makes parenting difficult	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
8	Makes it hard to give fair attention to all family members	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
9	Provokes others to hit or scream at him/her	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
10	Costs the family more money	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
B	SCHOOL					
	Learning					
1	Makes it difficult to keep up with schoolwork	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
2	Needs extra help at school	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
3	Needs tutoring	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
4	Receives grades that are not as good as his/her ability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
	Behaviour					
1	Causes problems for the teacher in the classroom	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
2	Receives "time-out" or removal from the classroom	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
3	Having problems in the school yard	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
4	Receives detentions (during or after school)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
5	Suspended or expelled from school	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
6	Misses classes or is late for school	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
C	LIFE SKILLS					
1	Excessive use of TV, computer, or video games	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
2	Keeping clean, brushing teeth, brushing hair, bathing, etc.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
3	Problems getting ready for school	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>

		Never or not at all	Sometimes or somewhat	Often or much	Very often or very much	n/a
4	Problems getting ready for bed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
5	Problems with eating (picky eater, junk food)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
6	Problems with sleeping	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
7	Gets hurt or injured	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
8	Avoids exercise	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
9	Needs more medical care	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
10	Has trouble taking medication, getting needles or visiting the doctor/dentist	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
D	CHILD'S SELF-CONCEPT					
1	My child feels bad about himself/herself	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
2	My child does not have enough fun	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
3	My child is not happy with his/her life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
E	SOCIAL ACTIVITIES					
1	Being teased or bullied by other children	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
2	Teases or bullies other children	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
3	Problems getting along with other children	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
4	Problems participating in after-school activities (sports, music, clubs)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
5	Problems making new friends	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
6	Problems keeping friends	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
7	Difficulty with parties (not invited, avoids them, misbehaves)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
F	RISKY ACTIVITIES					
1	Easily led by other children (peer pressure)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
2	Breaking or damaging things	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
3	Doing things that are illegal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
4	Being involved with the police	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
5	Smoking cigarettes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
6	Taking illegal drugs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
7	Doing dangerous things	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
8	Causes injury to others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
9	Says mean or inappropriate things	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
10	Sexually inappropriate behaviour	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>

		Number of Items Scored '2' or '3'		
A	Family	0	0	/0
B	School Learning	0	0	/0
	School Behavior	0	0	/0
C	Life skills	0	0	/0
D	Child's self-concept	0	0	/0
E	Social activities	0	0	/0
F	Risky activities	0	0	/0
TOTAL		0	0	/0

		Total Score		
A	Family	0	0	/0
B	School Learning	0	0	/0
	School Behavior	0	0	/0
C	Life skills	0	0	/0
D	Child's self-concept	0	0	/0
E	Social activities	0	0	/0
F	Risky activities	0	0	/0
TOTAL		0	0	/0

		Mean Score	
A	Family	0.00	
B	School Learning	0.00	
	School Behavior	0.00	
C	Life skills	0.00	
D	Child's self-concept	0.00	
E	Social activities	0.00	
F	Risky activities	0.00	
MEAN*		0.00	

*Calculated from 0 answered questions.

This scale is copyrighted by Margaret Danielle Weiss, MD PhD, at the University of British Columbia. The scale can be used by clinicians and researchers free of charge and can be posted on the internet or replicated as needed. Please contact Dr. Weiss at margaret.weiss@icloud.com if you wish to post the scale on the internet, use it in research or plan to create a translation.

RESET FORM

RESEARCH GAPS

How to sequence and combine treatments across the life span?

Who decides targets when there is disagreement

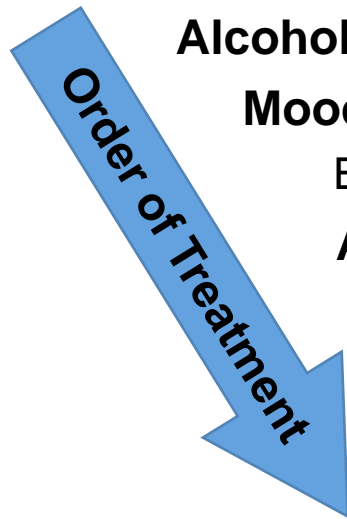
- parents, teachers, child, spouse?

Efficacy of Alternative/adjunctive treatments

Environmental interventions (structure, schools, after schools, monitoring)

How and when to discontinue medications if symptoms and impairment are minimal: Is it effective treatment, learning/development, maturation?

DIAGNOSTIC PRIORITIZATION IN PHARMACOTHERAPY OF ADHD AND COMORBIDITY



Alcohol and substance abuse

Mood disorders

Bipolar and MDD

Anxiety disorders

Obsessive-compulsive disorder,
generalized anxiety disorder, panic

ADHD

**Order of treatment also considers the
severity of the concurrent disorders**

Goodman D. Treatment and assessment of ADHD in adults. In: Biederman J, ed. *ADHD Across the Life Span: From Research to Clinical Practice—An Evidence-Based Understanding*. Hasbrouck Heights, NJ: Veritas Institute for Medical Education, Inc. 2005.

SUMMARY AND NEXT STEPS

- Research on impairment as a criteria for treatment
- Treatment should target impairment
- Development of impairment norms
- Guidelines for weighing impact of accommodations combined with Rx
- Safety and efficacy for subclinical, mild, and moderate ADHD
- Study of non-pharmacological alternatives (exercise,CAM)

NEW DISORDERS

HEALTH LIBRARY

SLEEP DISORDERS: WHEN TO SEEK HELP

- [Overview](#)
- [Test Details](#)
- [Results and Follow-Up](#)
- [Additional Details](#)
- [Resources](#)

HEALTH & WELLNESS TIPS

Fitness, health and wellness tips sent to you weekly

August 3, 2021 / [Sleep](#)

There's New Hope for People With Idiopathic Hypersomnia

First approved drug may soon be available to treat this rare sleep disorder

Though [narcolepsy](#) is fairly well-studied and well understood by medical professionals, there's far less data available on its close cousin, idiopathic hypersomnia.

[Classified as a rare disorder](#) by the National Institutes of Health, idiopathic hypersomnia (IH) may actually be more common than doctors previously realized — and a new medication could offer desperately needed wakefulness to those who live with this debilitating disorder.

Sleep specialist [Nancy Foldvary-Schaefer, DO, MS](#), is an investigator in medical trials of lower-sodium oxybate, a new medication undergoing review by the U.S. Food and Drug Administration (FDA) to become the first approved treatment for IH. She talks about idiopathic hypersomnia, including why it's so understudied, and what this new medication may be able to do for people with IH.

What is idiopathic hypersomnia?

There's being sleepy, and then there's having idiopathic hypersomnia. IH is characterized by chronic excessive daytime sleepiness (known as EDS) that interferes with normal daily activities, such as work and hobbies.

"People with IH have an irresistible need to sleep for long periods of time," Dr. Foldvary-Schaefer explains, "but their sleep is not refreshing."

Other symptoms include:

- Regularly sleeping nine hours or more over a period of 24-hour periods, yet feeling unrefreshed upon waking. (Some people with IH do sleep less.)
- Extreme difficulty awakening from sleep, sometimes known as [sleep drunkenness](#).
- Non-refreshing daytime [napping](#).
- Uncontrollable desire to go back to sleep.
- Brain fog that may impact memory, attention and concentration.
- Headaches.

If you have IH, the overwhelming need to sleep may be incapacitating.

"People sometimes avoid social situations just to avoid falling asleep at inappropriate times which can be incredibly isolating," Dr. Foldvary-Schaefer says. "There can also be limitations around driving and work — the struggles really go on and on."



ETHICAL ISSUES: FAIRNESS AND SAFETY

(JOHN LANTOS)

- Fairness is a matter of convention.
- We judge fairness or unfairness based upon an agreement about the rules.
- The rules must be constantly examined.
- New developments will challenge conventional wisdom and may lead to new rules.
- Lack of safety data in non-clinical populations
- Worries are more about fairness and naturalness than about safety
- The academic world is inherently unfair. Rich kids have better schools, teachers, homes, technology.

THANK YOU

