ADHD: Overdiagnosed? Or Finally Getting the Attention it Deserves?

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4/21/25

Internal Medicine Review

Disclosures

- No financial disclosures or conflicts of interest.

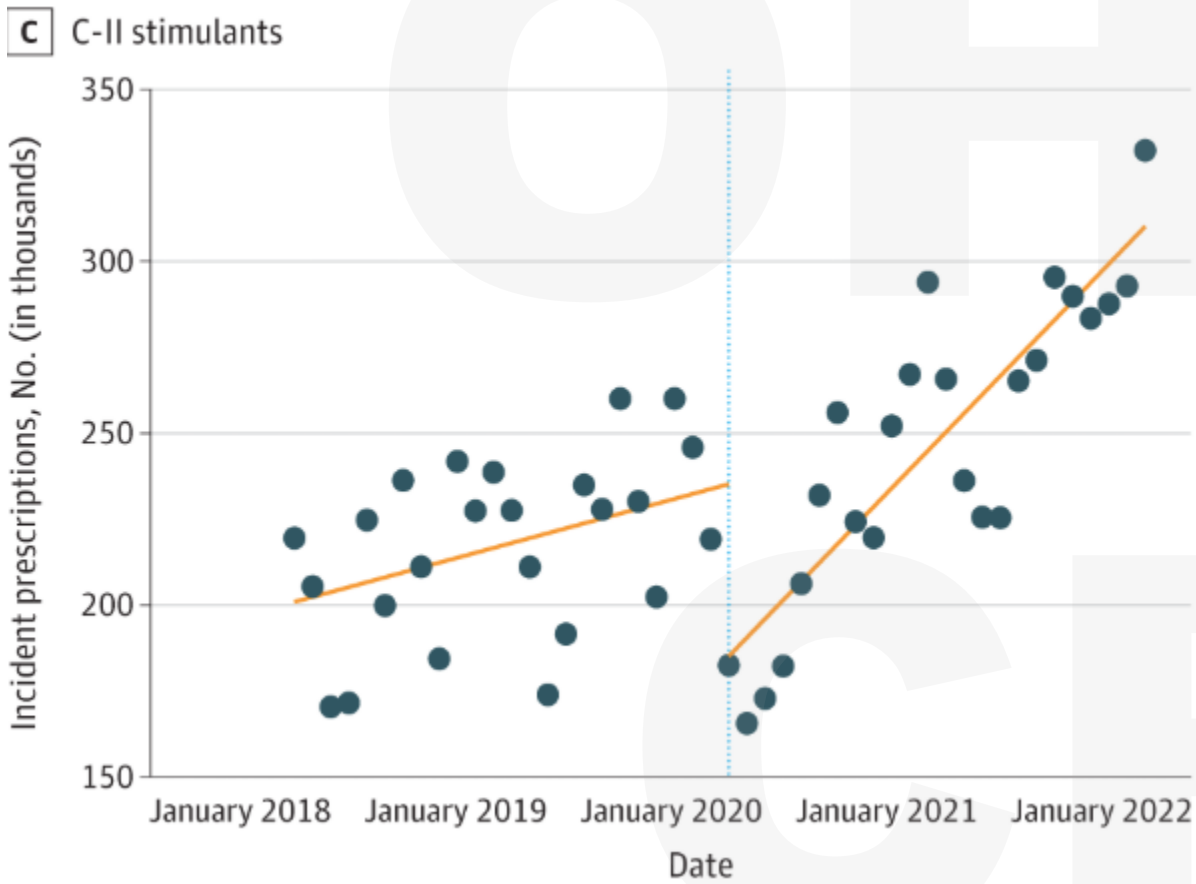
Learning Objectives

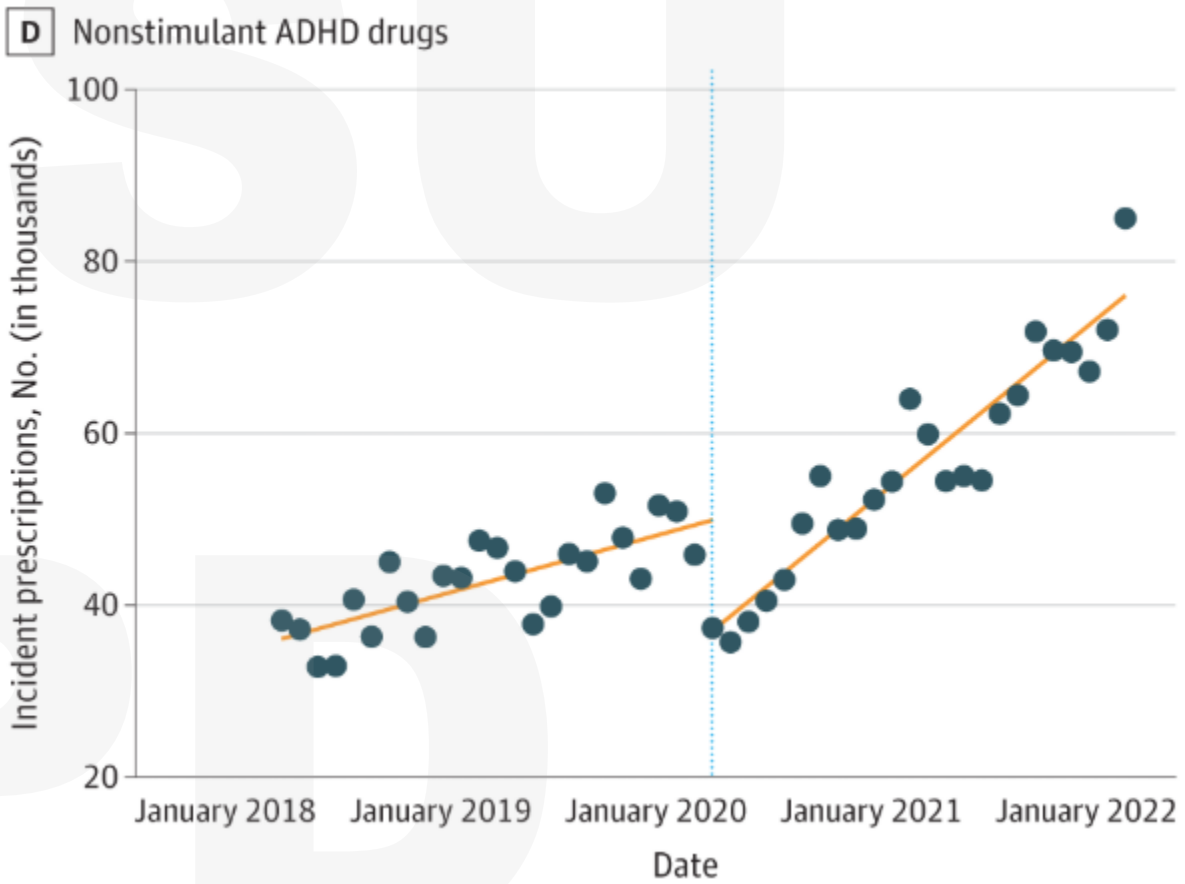
1. Review the epidemiology, pathophysiology, and clinical presentation of ADHD in adults.
2. Discuss the ADHD diagnostic criteria and differential diagnosis for inattention.
3. Examine treatment options for adults with ADHD.

Epidemiology

- In the U.S., 11.4% of children (3-17yo) have a diagnosis of ADHD.
  - Male: Female ratio of 2:1
  - White and Black children are more likely to be diagnosed and treated for ADHD than Asian or Hispanic children.
- Up to 60-80% of youth with ADHD have symptoms that persist into adulthood, and the prevalence of ADHD in adults is estimated to be **2.5-6%.**
- **Over half of adults with ADHD were diagnosed in adulthood.**

Faraone *et al*, 2021
Sharma and Couture, 2014
Shi *et al*, 2021
CDC ADHD data, 2024

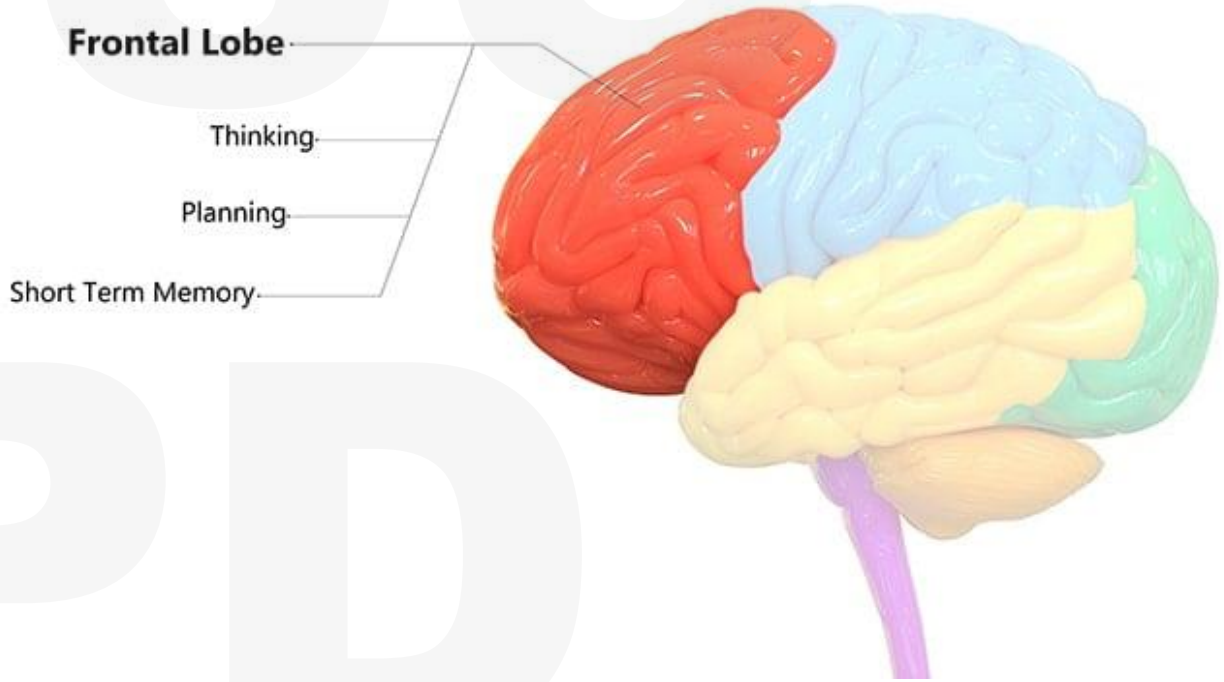

C
C-II stimulants
Incident prescriptions, No. (in thousands)
350
300
250
200
150
January 2018
January 2019
January 2020
January 2021
January 2022
Date


D
Nonstimulant ADHD drugs
Incident prescriptions, No. (in thousands)
100
80
60
40
20
January 2018
January 2019
January 2020
January 2021
January 2022
Date

Chai, 2024

Pathophysiology

- Slower maturation and decreased volume of the prefrontal cortex (PFC).
- Dysregulation of catecholamines dopamine (DA) and norepinephrine (NE):
  - Goal of medication treatment is to restore catecholamine balance in PFC.



Sharma and Couture, 2014

- Individuals with ADHD may struggle with delayed gratification, **opting for smaller immediate rewards** over larger delayed rewards.
    - Can lead to more **impulsive** decisions

Wilens, 2006

Clinical Presentation

- ***Inattention, hyperactivity, impulsivity***
- In adults, this can present as:
  - Poor job performance
  - Difficulty in maintaining relationships
  - Difficult with completing tasks at home
  - Being late for appointments
  - Impulsive behaviors including substance use and dangerous driving

Co-occurring Conditions

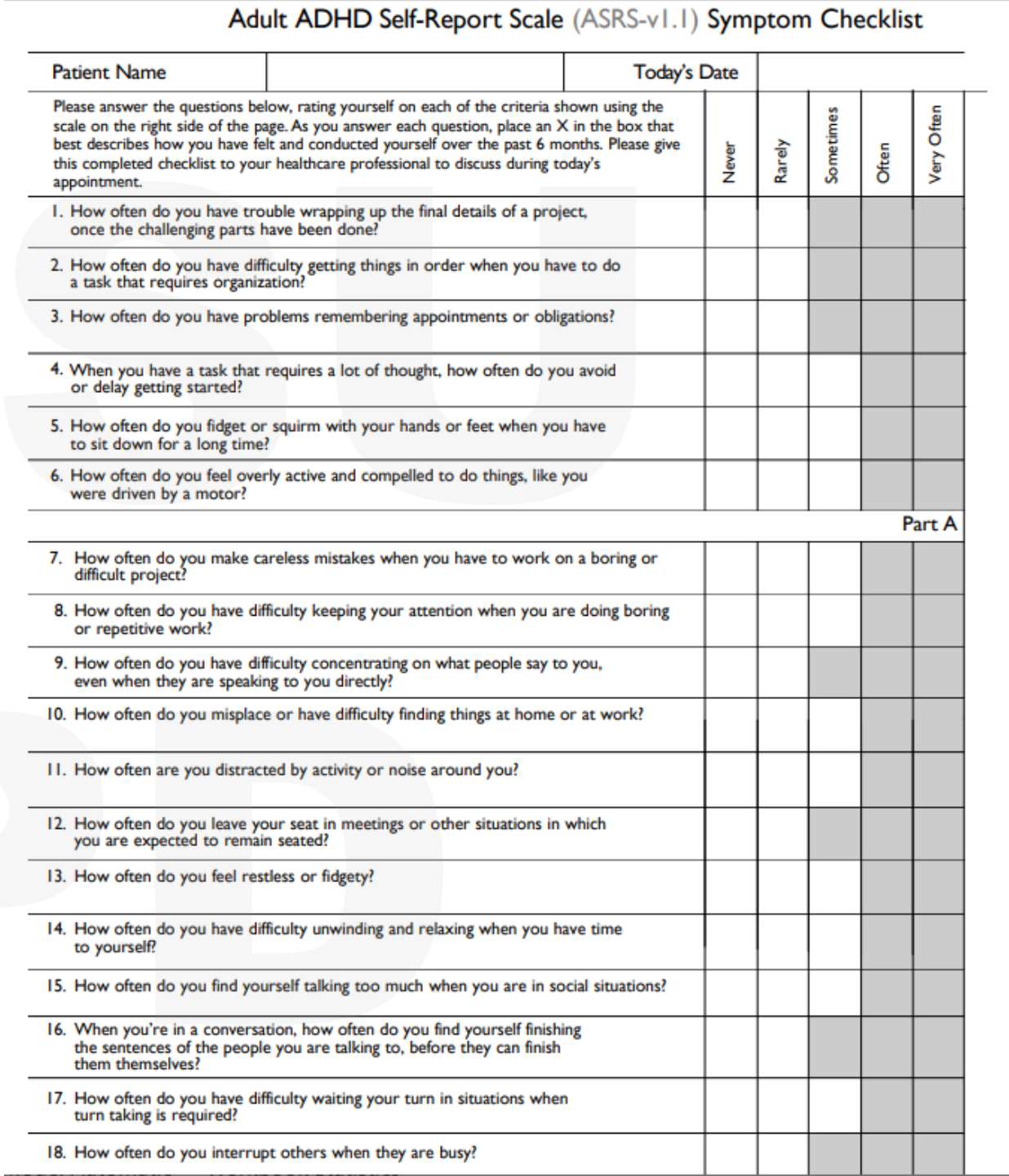
- Anxiety disorders
- Major depressive disorder
- Bipolar disorder
- Substance use disorders (including tobacco use)
- Suicide
- Cardiovascular disease
- Diabetes
- **Reduced life expectancy of ~8 years**

Hartman, 2023
O'Nions, 2025

Screening Tools

- Adult ADHD Self-Report Scale
- In a primary care population was found to have **sensitivity 100%** and **specificity 71%.**
- **Positive predictive value = 52%**
- **Negative predictive value = 100%**
- Can also be helpful for monitoring symptoms over time and treatment response.

Usten, 2017
Hines, 2012



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?							

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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?					

4+ in Gray Boxes = Positive Screen

Diagnosis

- Diagnosis is based on clinical assessment for DSM-5 criteria.
- Can be challenging as it is based off subjective symptoms.
- No specific blood/imaging test.
- Need to exclude other causes of inattention (e.g., cannabis or alcohol use, obstructive sleep apnea, active depressive episode).
- May require repeated observations over time and info from family.

Differential Diagnosis for Inattention

Learning disorders

Chronic pain

Sleep Apnea

Depressive disorder

Hypothyroidism

Anxiety disorders

Anemia

PTSD

Alcohol, nicotine, cannabis, or other substance use

Prescribed medications (steroids, anticonvulsants, opioids)

Table 1

DSM-5 criteria for diagnosis of ADHD in adults

≥5 symptoms per category in adults, persisting at least 6 months; present prior to age 12; several symptoms are present in ≥2 settings; symptoms interfere with, or reduce the quality of social, academic, or occupational functioning

Inattention
a. Lack of attention to details/careless mistakes
b. Difficulty sustaining attention in tasks
c. Does not seem to listen when spoken to directly
d. Does not follow through on instructions
e. Difficulty organizing tasks and activities
f. Avoids tasks that require sustained mental effort
g. Loses or misplaces objects
h. Easily distracted
i. Forgetful in daily activities

Hyperactivity and impulsivity
a. Fidgetiness (hands or feet)/squirms in seat
b. Leaves seat frequently
c. Feeling restless
d. Unable to engage in leisure activities quietly
e. Always "on the go," difficulty being still for extended time
f. Talks excessively
g. Blurts out answers
h. Difficulty waiting his or her turn
i. Interrupts or intrudes on others

ADHD: attention-deficit/hyperactivity disorder

Symptoms:

- Present **prior to age 12**
- Present in **2+ settings**
- **Impairment** of social, academic, and/or occupational functioning

https://www.mdedge.com/psychiatry/article/114028/adhd/adult-adhd-pharmacologic-treatment-dsm-5-era

Diagnosis

1. Evaluate current symptoms that have occurred in the past 6 months
   Can be helpful to use a rating scale to start but need to review DSM-5 criteria!
2. Ask about functional impairment at work/school and in relationships.
3. Ask about childhood history – school performance (special education? Repeated grades? Graduated high school on time?), relationships with peers and family growing up.
4. Screen for psychiatric disorders and substance use (alcohol, cannabis, nicotine).
5. Screen for medical causes (e.g., hypothyroidism, sleep apnea)

It's OK to do this over several visits!

Post and Kurlansik, 2012

Case Example – Initial visit

- Sophia (she/her) a 23-year-old female presents to establish care.
- She is concerned about anxiety and difficulty concentrating.
- Currently she lives with her boyfriend and is trying to start a small business making jewelry. She is concerned because she will spend hours putting off starting a jewelry making project. At home she will get distracted while doing laundry/dishes and will often lose things such as her keys and wallet.
- She describes feeling anxious since she can't get these things done and is worried that her business will be a failure and that her partner will be upset since the chores are never completed.

Case Example

- She reports feeling anxious and having difficulty concentrating since childhood.
- She got Cs throughout most of school but did manage to graduate high school on time. She was never evaluated for learning disabilities or ADHD.
- She did see the school counselor because she had trouble connecting with her peers.
- She went to community college but dropped out after 2 semesters.

Case Example

- She denies having experienced traumatic events in the past.
- She denies use of alcohol, cannabis or nicotine. She does drink 1 cup of coffee per day.
- She does not take any medications. No allergies.
- Family history of depression and hypothyroidism in her mother.
- No personal or family history of cardiovascular disease.

Case Example - EXAM

- VS: Temp 97.1, HR 73, BP 102/74, RR 14
- HEENT: Normal
- CV: RRR, normal s1/s2, no murmurs
- Pulm: CTAB
- Abd: NABS, non-tender
- Skin: no rashes/lesions

- Psych:
  - Appearance: young female, appears stated age
  - Engagement: Occasionally distracted, asking for questions to be repeated
  - Speech: Fast but interruptible, not pressured, anxious tone
  - Mood/Affect: Anxious
  - Thought process: Occasionally circumstantial, mostly linear
  - No overt delusions or hallucinations
  - Denies SI/HI

GAD-7 Anxiety

Over the last two weeks, how often have you been bothered by the following problems?	Not at all	Several days	More than half the days	Nearly every day
1. Feeling nervous, anxious, or on edge	0	1	2	3
2. Not being able to stop or control worrying	0	1	2	3
3. Worrying too much about different things	0	1	2	3
4. Trouble relaxing	0	1	2	3
5. Being so restless that it is hard to sit still	0	1	2	3
6. Becoming easily annoyed or irritable	0	1	2	3
7. Feeling afraid, as if something awful might happen	0	1	2	3

Column totals _____ + _____ + _____ + _____ =

Total score 7

Mild anxiety

PATIENT HEALTH QUESTIONNAIRE-9 (PHQ-9)

Over the last 2 weeks, how often have you been bothered by any of the following problems? *(Use "✔" to indicate your answer)*	Not at all	Several days	More than half the days	Nearly every day
1. Little interest or pleasure in doing things	0	1	2	3
2. Feeling down, depressed, or hopeless	0	1	2	3
3. Trouble falling or staying asleep, or sleeping too much	0	1	2	3
4. Feeling tired or having little energy	0	1	2	3
5. Poor appetite or overeating	0	1	2	3
6. Feeling bad about yourself — or that you are a failure or have let yourself or your family down	0	1	2	3
7. Trouble concentrating on things, such as reading the newspaper or watching television	0	1	2	3
8. Moving or speaking so slowly that other people could have noticed? Or the opposite — being so fidgety or restless that you have been moving around a lot more than usual	0	1	2	3
9. Thoughts that you would be better off dead or of hurting yourself in some way	0	1	2	3

FOR OFFICE CODING 0 + _____ + _____ + _____

=Total Score: 6

Mild depression

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

Stop at the lab, follow up in 2-4 weeks!

- CMP and CBC normal
- TSH within normal limits
- Urine drug screen negative
- Urine pregnancy test negative

Case Example – Second visit

- Given that she screened positive on the ASRS v1.1, it's time to dive in and explore if she does in fact meet ADHD criteria based on the DSM!
- It can be helpful to use tools for a semi-structured interview:

Diagnostic Interview for ADHD in adults (DIVA) 2.0 (new DIVA-5 also available)

1. Asks for specific examples of DSM criteria during adulthood and childhood
   - Ex: "Do you often find it difficult to organize tasks and activities? *And how was that during childhood?"*
2. Asks about age of onset of symptoms
3. Asks about functional impairment at work, school, in relationships/families

https://www.advancedassessments.co.uk/resources/ADHD-Screening-Test-Adult.pdf
https://www.divacenter.eu/DIVA.aspx

Table 1

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≥5 symptoms per category in adults, persisting at least 6 months; present prior to age 12; several symptoms are present in ≥2 settings; symptoms interfere with, or reduce the quality of social, academic, or occupational functioning

Inattention

- a. Lack of attention to details/careless mistakes ✓
- b. Difficulty sustaining attention in tasks ✓
- c. Does not seem to listen when spoken to directly ✗
- d. Does not follow through on instructions ✗
- e. Difficulty organizing tasks and activities ✓
- f. Avoids tasks that require sustained mental effort ✓
- g. Loses or misplaces objects ✓
- h. Easily distracted ✓
- i. Forgetful in daily activities ✓

Hyperactivity and impulsivity

- a. Fidgetiness (hands or feet)/squirms in seat ✗
- b. Leaves seat frequently ✗
- c. Feeling restless ✗
- d. Unable to engage in leisure activities quietly ✗
- e. Always "on the go," difficulty being still for extended time ✗
- f. Talks excessively ✓
- g. Blurts out answers ✓
- h. Difficulty waiting his or her turn ✗
- i. Interrupts or intrudes on others ✓

ADHD: attention-deficit/hyperactivity disorder

Sophia meets criteria for ADHD, inattentive type.

Return to clinic in 2-4 weeks to talk about treatment!

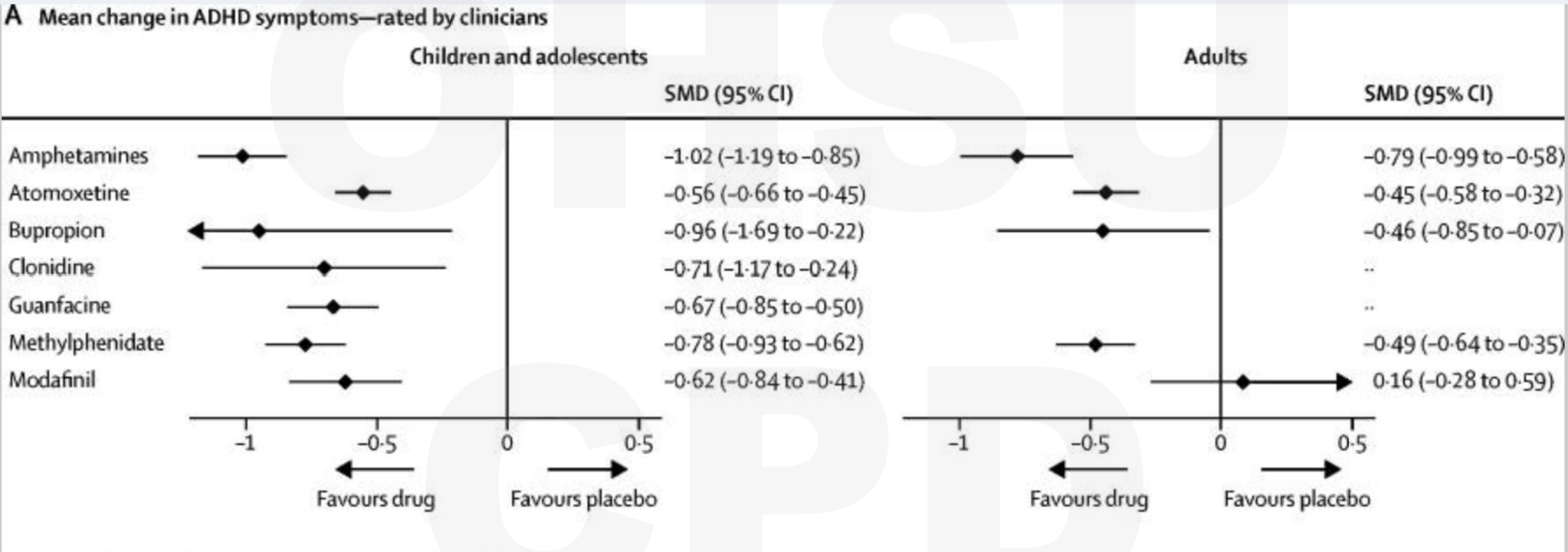
Treatment

Medications – Stimulants

	Amphetamines	Methylphenidate
Mechanism of Action	Inhibits reuptake of DA/NE and increases release of DA/NE from presynaptic nerve terminals	Only inhibits reuptake of DA & NE
Addiction Potential	Higher	Lower
Efficacy	May be more efficacious	May be less efficacious
Risk for drug-drug interactions	More interactions due to metabolism by CYP450	Fewer drug-drug interactions

DA = Dopamine
NE = Norepinephrine

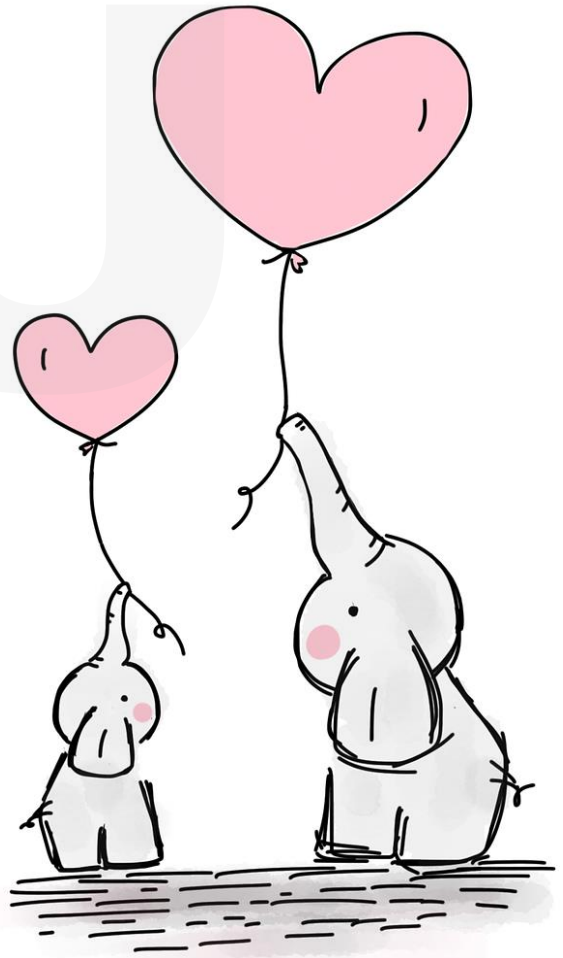
Post and Kurlansik, 2012
Sharma and Couture, 2014



Cortese, 2018

Stimulants and Cardiovascular Risk

- Case-control study of >270,000 individuals looked at association between stimulant medication for ADHD and cardiovascular disease (CVD).
- Increased risk of CVD, particularly **hypertension** and **arterial disease**, compared to non-use.
  - 23% increased risk if on medication >5 years
- *Highlights the importance of risk/benefit discussion and regular cardiovascular monitoring for those treated with stimulants.*



Zhang *et al*, 2024

Stimulants – Amphetamine Based

Brand Name (Generic)	Duration of Action	Dosing Recommendations	Adverse Effects
Adderall (amphetamine and dextroamphetamine salts)	4-6 hours	Initial: 5mg PO 1-2x/day Increase by 5mg/week* Max: 40mg daily	• Insomnia • Decreased appetite, weight loss • Abdominal pain, nausea/vomiting • Dry mouth • Headache • Irritability • Anxiety • Hypertension, tachycardia • Sexual dysfunction • Psychosis (Rare) • Seizures (Rare) • Sudden cardiac death in patients with pre-existing structural heart disease (Rare)
Adderall XR (amphetamine and dextroamphetamine salts)	10-12 hours	Initial: 10mg daily AM Increase by 5-10mg/week* Max: 30mg daily	
Vyvanse (lisdexamfetamine)	12 hours	Initial: 30mg daily AM Increase by 10-20mg/week* Max: 70mg	
Dexedrine (dextroamphetamine)	4-5 hours	Initial: 5mg PO 1-2x/day Increase by 5mg/week* Max: 60mg daily	

*Titrate to minimum effective dose

Adapted from Stahl's essential psychopharmacology, 2020

Stimulants – Methylphenidate Based

Brand Name (Generic)	Duration of Action	Dosing Recommendations	Adverse Effects
Ritalin (methylphenidate IR)	3-4 hours	Initial: 5mg BID Increase by 5-10mg/week Max: 60mg daily (typically divided)	• Insomnia • Decreased appetite, weight loss • Abdominal pain, nausea/vomiting • Dry mouth • Headache • Irritability • Anxiety • Hypertension, tachycardia • Sexual dysfunction • Psychosis (Rare) • Seizures (Rare) • Sudden cardiac death in patients with pre-existing structural heart disease (Rare)
Ritalin SR, Metadate ER (methylphenidate SR)	4-6 hours	Initial: 10mg BID Increase by 10mg/week Max: 60mg (typically divided)	
Ritalin LA, Metadate CD (methylphenidate ER capsules)	8-10 hours	Initial: 10-20mg daily AM Increase by 10mg/week Max: 60mg daily	
Concerta (methylphenidate ER tablets)	12 hours	Initial: 18-36mg daily AM Increase by 18mg/week Max: 72mg daily	

*Titrate to minimum effective dose

Adapted from Stahl's essential psychopharmacology, 2020

Stimulants – Methylphenidate Based

Brand Name (Generic)	Duration of Action	Dosing Recommendations	Adverse Effects
Focalin (dexmethylphenidate)	6 hours	Initial: 2.5mg BID Increase by 2.5-5mg/week* Max: 20mg	• Insomnia • Decreased appetite, weight loss • Abdominal pain, nausea/vomiting • Dry mouth • Headache • Irritability • Anxiety • Hypertension, tachycardia • Sexual dysfunction • Psychosis (Rare) • Seizures (Rare) • Sudden cardiac death in patients with pre-existing structural heart disease (Rare)
Focalin XR (dexmethylphenidate)	12 hours	Initial: 10mg daily Increase by 10mg/week* Max : 40mg	

*Titrate to minimum effective dose

Adapted from Stahl's essential psychopharmacology, 2020

Non-Stimulants

Brand Name (Generic)	Dosing	Adverse Effects
Straterra (atomoxetine) *NE re-uptake inhibitor*	Initial: 40mg daily Can increase up to 80mg after 7 days, can increase further up to 100mg after 2-4 weeks. Max: 100mg *Tip: BID dosing can reduce GI upset* *Can take 4-6 weeks for full effect*	• Sedation, fatigue (mostly in children) • Decrease appetite, nausea • Increased HR and BP • Insomnia, anxiety, agitation • Dry mouth, constipation • Sexual dysfunction
Wellbutrin XL (bupropion) *NA & DA re-uptake inhibitor* *Note: Not FDA approved to treat ADHD but frequently used for this indication!*	Initial: 150mg daily After 4 days can increase up to 300mg Max: 450mg *Can start to see improvement after 2 weeks*	• Dry mouth, nausea, constipation, weight loss • Insomnia, dizziness, headache, anxiety, tremor • Sweating • Hypertension • Rarely seizures

Clonidine and guanfacine used more in children and adolescents.

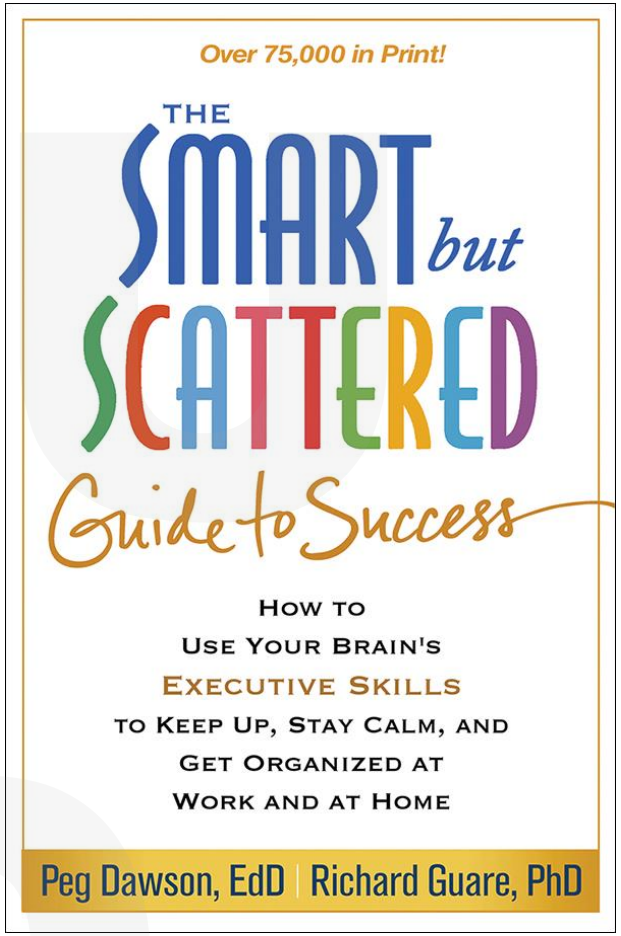
Adapted from Stahl's essential psychopharmacology, 2020

Pearls – Stimulants

- Some patients respond better to amphetamine-based stimulants than methylphenidate and vice versa – if one is not working, try switching to the other class.
  - Same goes for side effects!
- If the length of effect is too short, try switching to a longer-acting agent.
- If a patient is experiencing insomnia, they may be taking the medication too late in the morning or it may be too long-acting --> switch to something shorter-acting.
- Taking stimulants with food can delay the peak effect 2-3 hours.

Behavioral Treatments

- Meditation/mindfulness
- Cognitive behavioral therapy – can help with building practical strategies:
  - Keeping lists
  - Having designated places for things around the home
  - Giving yourself extra time before appointments



HOME ORGANIZATION

40 Little Life Hacks from ADHD Gurus

Run-of-the-mill organization strategies don't work for adults with ADD. Our ADHD brains — and...

Managing Symptom Triggers

- ***Stress***
- ***Not getting enough sleep***
- ***Not eating well***
- ***Too much screen time***
- ***Not getting enough exercise***
- ***Too much sensory input***

https://pixabay.com/photos/laptop-woman-education-study-young-3087585/

Monitoring for Efficacy and Safety

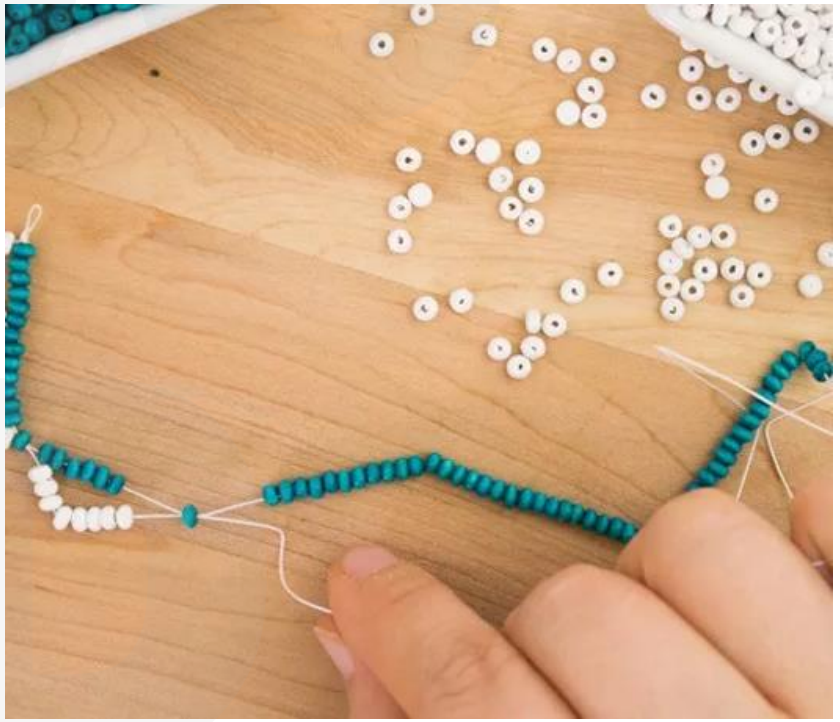
- Identify treatment goals – be as specific as possible so you can track progress over time:
  - Being able to read "X" pages without distraction
  - Being able to complete specific tasks around the home in less time
  - Measures of school or job performance
- Regularly ask about side effects and tolerability.
- Monitor for elevated blood pressure and heart rate.
- Drug holidays?

Monitoring Recommendations:

- Avoid off-label use for schedule II agents.
- Yearly urine drug screen for patients on schedule II agents.
- PMDP check at least yearly – *I check every time I provide a refill*
- Assess for polypharmacy and avoid antagonistic depressant medicines.
- Screen for substance use disorder. Do not prescribe in alcohol use disorder or daily/near daily cannabis use.
- Stimulant Risk & Controlled Med Agreement at start of treatment.
- Visits every 6-12 mo during maintenance treatment. Monitor BP/HR. Evaluate risk vs benefit of continued prescribing.

Case Example #1 – Third and fourth visit

- After discussing treatment options, you and Sophia decide to start lisdexamfetamine (Vyvanse) 30mg daily AM.
- She signs a controlled medication agreement form.
- She returns to clinic one month later reporting significant improvement in her focus and concentration. She finally feels like her mind is calm and that she can dive into starting projects. She denies having any side effects from the medication and her BP remains normal.



When to refer?

- Uncertainty about ADHD diagnosis based on clinical symptoms alone
- Concerns about co-occurring psychiatric disorders
- Patient not improving despite treatment

NORTHWEST ADHD TREATMENT CENTER

https://nw-adhd.com

Pacific University Oregon

Offer ADHD assessments for $350 flat fee

Assessment & Testing Services | Pacific University

Takeaways

1. ADHD in adults is associated with poorer physical and mental health outcomes, including reduced life expectancy.
2. Not all inattention is ADHD and a positive screen for ADHD is not diagnostic. Use the DSM-5 criteria to make a diagnosis!
3. Do not feel pressured to make a diagnosis during the first visit. It can be helpful to assess patients over time and gather additional information.
4. Consider risks vs benefits when starting or continuing a stimulant medication. Have a framework for monitoring efficacy and side effects.

Resources

1. AAFP Adult ADHD Toolkit - https://www.aafp.org/family-physician/patient-care/prevention-wellness/emotional-wellbeing/adhd-toolkit.html

2. Children and Adults with Attention-Deficit/Hyperactivity Disorder (CHADD) - https://chadd.org/

3. ADDitude - https://www.additudemag.com/

4. AFRICAN AMERICAN/BLACK DIASPORA +ADHD PEER SUPPORT GROUP- https://add.org/african-american-adhd-peer-support-group/

Up and Coming ECHO-

Autism and ADHD in Adults

Term: Winter 2026

Faculty lead: Christina Nicolaidis, MD, MPH, Professor and Senior Scholar in Social Determinants of Health, School of Social Work, Portland State University (PSU)

Tentative curriculum topics:

- Neuro-affirmative approaches to thinking about Autism and ADHD in Adults
- Identification of autism and ADHD in adults
- Evaluating and managing co-occurring conditions
- Identifying and making reasonable accommodations in healthcare
- Communication strategies with patients and supporters

https://www.oregonechonetwork.org/

grahamtu@ohsu.edu

Welcome to the Oregon Psychiatric Access Line (OPAL)

OPAL-K about Kids

OPAL-A about Adults

Phone

Toll-Free: 1-855-966-7255

Portland Metro: 503-346-1000

OPAL call center hours

9 a.m. – 5 p.m.

Monday through Friday, excluding major holidays

OPAL is not a walk-in clinic or in-person referral site

www.ohsu.edu/opal

Call for Backup!

Questions?

References

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Extra Slides

Stimulant Notice of Risk and Controlled Medication Agreement

CO1480

Oregon Health & Science University
Hospitals and Clinics
Internal Medicine

OHSU

STIMULANT NOTICE OF RISK AND CONTROLLED MEDICATION AGREEMENT

Page 1 of 1

ACCOUNT NO.
MED. REC. NO.
NAME
BIRTHDATE

Patient Identification

You have been diagnosed with:

- ☐ adult attention deficit hyperactivity disorder (ADD or ADHD)
- ☐ depression
- ☐ narcolepsy/other medical sleep disorder
- ☐ shift work sleep disorder
- ☐ sedating side effects from medications

I am prescribing: _____ **which is a stimulant.**

Stimulants can improve alertness, concentration and work performance in some adults. The medicine may be prescribed with or without drug "holidays" (weekends or non-work days). Stimulants can be used long-term. However, at least half of adults choose to stop treatment in less than one year. Reasons for stopping include side effects, not having relief of symptoms, or no longer needing medication.

Alternatives to stimulant medicine and other ways to improve your alertness include:

- ☐ antidepressant (bupropion, venlafaxine)
- ☐ atomoxetine (norepinephrine reuptake inhibitor)
- ☐ modafinil / armodafinil
- ☐ clonidine / guanfacine
- ☐ counseling / mental health visits
- ☐ stop medicines with sedating side effects
- ☐ avoid alcohol and marijuana
- ☐ sleep, exercise and nutrition

Stimulants have these risks:

- **Cognitive effects:** change in behavior, mood or thinking, irritability, hallucinations
- **Anxiety or panic attacks**
- **Difficulty sleeping**
- **Headache**
- **Increase in blood pressure, increase in heart rate**
- **Low appetite, weight loss**
- **Visual problems, retina problems, glaucoma.**
- **Abnormal movements:** can cause or worsen "tics" (impulsive abnormal movements)
- **Risks with alcohol:** Stimulants can mask early warning signs that you have had too much to drink, putting you at higher risk for alcohol poisoning.
- **Tolerance:** Increasing doses may be needed over time to give the same results.
- **Physical dependence and withdrawal:** After your body adjusts to this medicine, stopping abruptly may cause withdrawal symptoms such as depressed mood, fatigue, irritability, sleep problems, and loss of interest in activities. Withdrawal symptoms may occur during drug holidays, but this is not common if the treatment is not at a high dose. Dose changes should be supervised by your provider.
- **Addiction:** Addiction can cause cravings, a loss of control that leads you to take unsafe doses, and use for non-medical reasons (not to enhance performance), despite harmful consequences.
- **Birth defects**: if used during pregnancy
- **Seizure**

Controlled Medication Rules:

1. Because of the risks with alcohol outlined above, use caution if you drink alcohol while taking this medicine.
2. Do not increase the dose without instruction by your provider. Early refills will not be provided.
3. Keep your medication secure. We are not obligated to replace lost, damaged, or stolen medication.
4. Do not share or sell your medications.
5. This clinic may monitor treatment using drug tests, pill counts, review of pharmacy records and registries.
6. For disposal of unwanted medicine, search Oregon.gov for "drug take-back and disposal".
7. This clinic can change your treatment plan if benefits do not outweigh harms of continuing this medicine.

By signing below, you confirm that you understand the possible side effects and harms that may be caused by this controlled medication, and understand rules stated above.

Patient name:_____ **Signature:**_____ / / : am or pm
(If signing as surrogate for patient, include relationship) Date Time

Provider name: **Signature:** / / : am or pm
Date Time

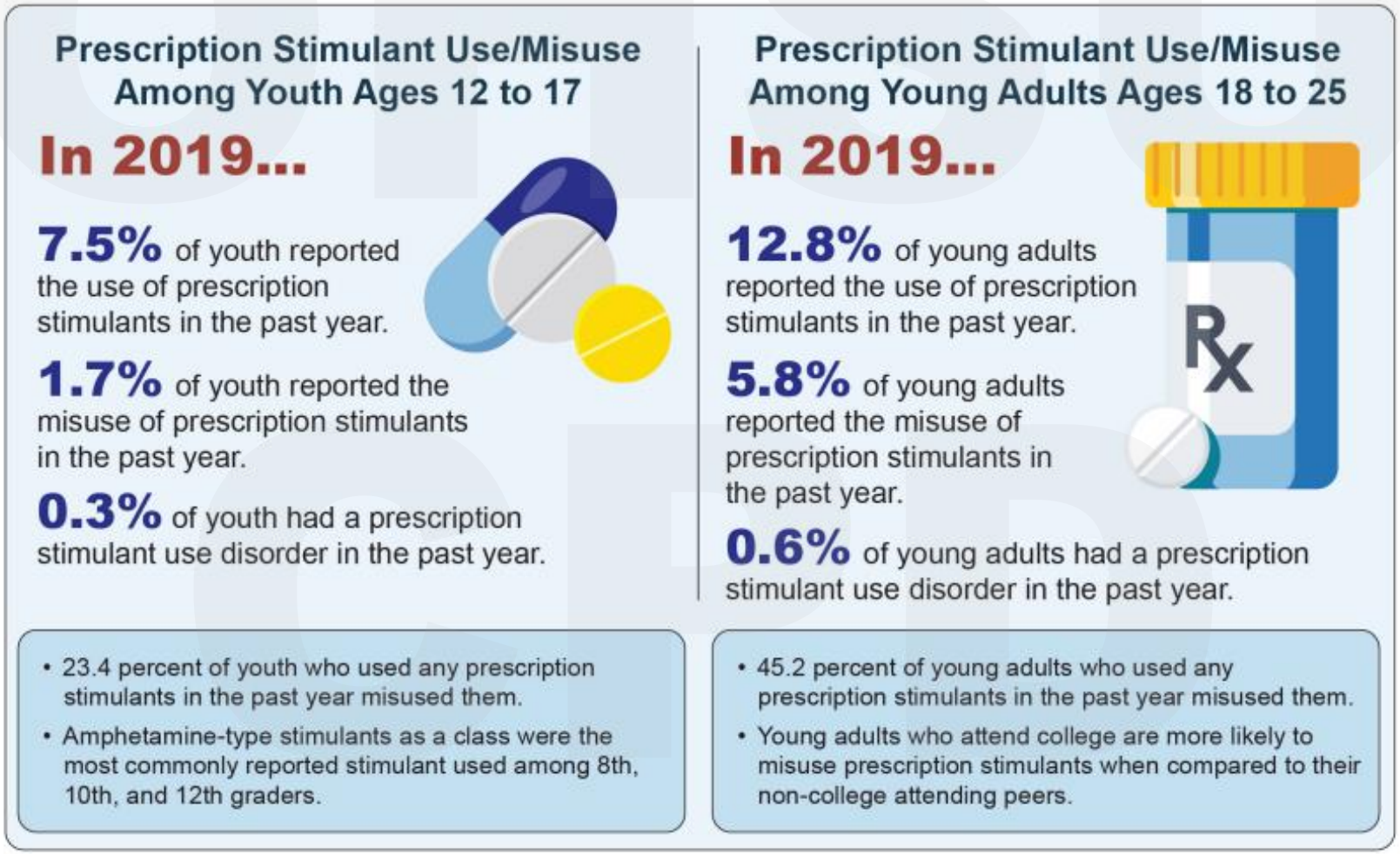
ONLINE 1/20

1 of 1

CO-4857

Stimulant Misuse and Diversion

Figure 2. Prevalence of Prescription Stimulant Misuse Among Youth and Young Adults[26-28]



Stimulant misuse in 2% of adults in general population

SAMHSA

Special Populations: Co-occurring Depression/Anxiety

Option (A) Treat underlying depression or anxiety first-

- Start an SSRI/SNRI and symptoms concerning for ADHD persist, then re-evaluate and consider adding on a stimulant.

Option (B) Pick a medication that may have benefit for both disorders:

- Atomoxetine and bupropion can have benefit in treating depression.
- Some evidence that atomoxetine and bupropion can be beneficial in treating anxiety disorders as well.
- Caution with combining atomoxetine and bupropion with SSRI/SNRIs (drug-drug interactions, risk for hypertension).

Special Populations: Substance use disorders

- Making a diagnosis of ADHD in patients with active substance use or who recently discontinued use can be very challenging.
- In patient with a clear history of ADHD that preceded substance use, treating ADHD can help prevent a return to use.
- If starting treatment in **lower-risk patients** (remote history of substance use, good social support) consider treatment with a sustained-release stimulant such as methylphenidate ER (Concerta).
- For **higher-risk patients**, would start with non-stimulant such as atomoxetine.

Mariani and Levin, 2007

Special Populations: Pregnancy and Breastfeeding

STIMULANTS

- Controlled studies of stimulant medications have not been done in pregnant patients.
- Perinatally exposed infants may experience withdrawal symptoms.
- General recommendation is to discontinue stimulants during pregnancy but weigh risks vs benefits in patients with severe ADHD.
- Methylphenidate is found in concentrations <1% in breastmilk, likely safe to breastfeed. Breastfeeding is generally not recommended with amphetamine-based stimulants.

Special Populations: Pregnancy and Breastfeeding

BUPROPION

- No randomized controlled trials in pregnant patients.
- Evidence from large epidemiologic studies have shown no increased risk for congenital abnormalities.
- General recommendation is to continue treatment during pregnancy in patients with depression.
- Found in small amount in breastmilk, generally considered safe to breastfeed.

ATOMOXETINE

- Lack of data in pregnant patients