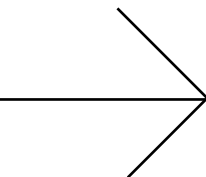


ADHD Medication- who needs it, why, and how/when to deprescribe

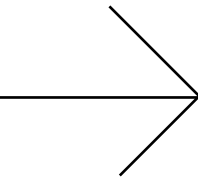
SCMS Presents Medicine 2026

Savannah Patterson, MD, MNeuro Sci



Disclosures and conflicts of interest

None



Who needs it

People meeting criteria for ADHD seeking treatment of functional impairment in at least 2 domains



Considerations when diagnosing

Highly heritable

Symptoms
(not diagnosis) before
age 12

Symptoms worsen with
biologically female
hormonal fluctuations

Co-occurring SUD
common

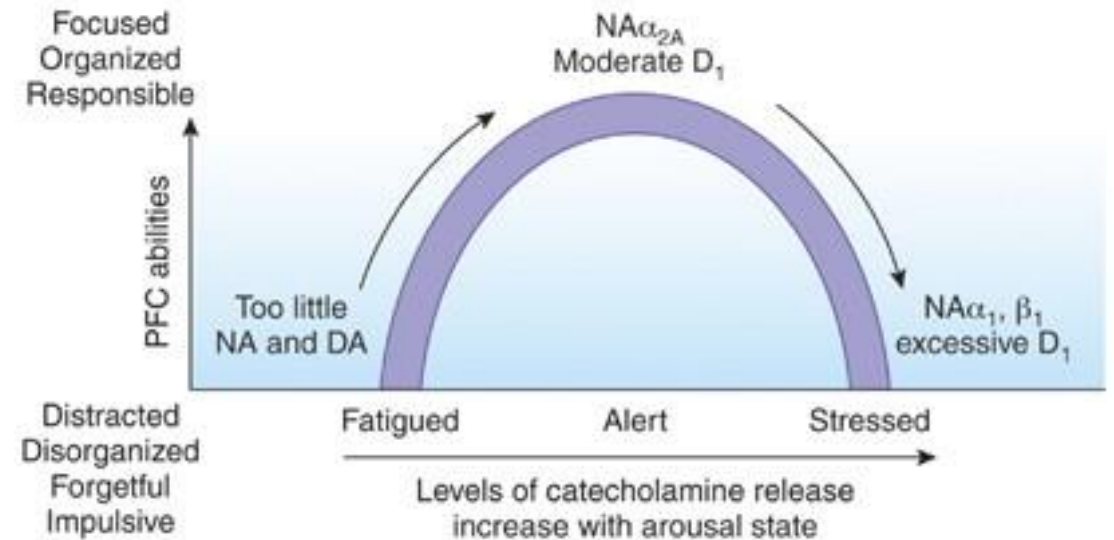
Why they need it

ADHD Neurobiological origin

Treatment efficacy

Diagnosis duration/course

Benefits and long-term outcomes



U-shaped curve relating activity on the prefrontal cortex (PFC) to levels of catecholamine release. PFC function is impaired whenever too little or too much catecholamine is released. (Arnsten, 2009)

What do they need?

Clinical dx discussion

Symptom scoring pre-treatment

Stimulants

- Long-acting options preferred

Regular symptom scoring

What do they need?



Table 1. Medications Approved by the Food and Drug Administration (FDA) for the Treatment of Attention Deficit–Hyperactivity Disorder (ADHD).*

Medication	Mechanism of Action	Preparation and Form†
Stimulants		
Amphetamines	Increase extracellular synaptic levels of dopamine and norepinephrine by inhibiting dopamine transporter and NE transporter; increase vesicular dopamine release by inhibiting VMAT-2 and release of cytosolic dopamine after reverse transport by dopamine transporter; inhibit monoamine oxidase; interact with ACH, 5-HT, opioid, and glutamate	Extended-release amphetamines: XR-OS liquid oral suspension, EROS liquid oral suspension (13 hr), orally disintegrating tablet (12 hr) Dextroamphetamine sulfate: tablet or solution (4–6 hr), extended-release capsule Lisdexamfetamine: capsule (13 hr), chewable tablet (13 hr) Methamphetamine: tablet Mixed amphetamine salts: tablet (4–6 hr), extended-release capsule (12 hr) Racemic amphetamine sulfate: tablet (4–6 hr), orally disintegrating tablet (10 hr) Triple-bead mixed amphetamine salts: extended-release capsule (16 hr)
Methylphenidate	Increases extracellular synaptic levels of dopamine and norepinephrine through inhibition of dopamine transporter and NE transporter and redistribution of VMAT-2; agonist activity at 5-HT _{1A} receptor	Dexmethylphenidate: tablet (4 hr), dexmethylphenidate extended-release capsule (12 hr) Methylphenidate: immediate-release tablet (4 hr), immediate-release solution, immediate-release chewable tablet, extended-release tablet (8 hr) or chewable tablet (8 hr), extended-release long-acting capsule (8 hr), controlled-delivery capsule (8 hr), transdermal patch (9 hr)‡, delayed-release and extended-release capsule (11 hr, after 10-to-12-hr delay in onset of action), osmotic-release oral system tablet (12 hr), extended-release orally disintegrating tablet (12 hr), extended-release suspension (12 hr), multilayer extended-release capsule (Aptensio XR [Rhodes Pharmaceuticals] [12 hr]; Adhansia XR [Purdue] [13–16 hr])
Nonstimulants		
Atomoxetine	Selectively inhibits NE transporter; increases extracellular synaptic levels of NE and dopamine in prefrontal cortex	Capsule (24 hr)
Extended-release clonidine	Stimulates postsynaptic α_2 -adrenergic receptors	Tablet
Extended-release guanfacine	Stimulates postsynaptic α_{2A} -adrenergic receptors	Tablet (24 hr)

* Shown are medications approved for the treatment of ADHD as of April 1, 2020, under a New Drug Application (NDA) or Abbreviated New Drug Application (ANDA). Mixed amphetamine salts (tablet), dextroamphetamine sulfate (tablet or solution), racemic amphetamine sulfate (tablet), immediate-release methylphenidate (chewable tablet), and methylphenidate extended-release tablet (8 hr) are available only under an ANDA (www.accessdata.fda.gov/scripts/cder/daf/). Additional details on the mechanisms of action and the response duration are provided in Sections S5 and S4, respectively, in the Supplementary Appendix, available with the full text of this article at NEJM.org. FDA-approved age and dose range are shown in Table S5 in the Supplementary Appendix. ACH denotes acetylcholine, 5-HT 5-hydroxytryptamine (serotonin), NE norepinephrine, and VMAT-2 vesicular monoamine transporter 2.

† The approximate response duration, if available, is in parentheses.

‡ The response to the transdermal patch may persist for 2 to 3 hours after patch removal.

What do they need?



Methylphenidate ER 18 mg QAM for 3-4 weeks

- Evaluate benefit: objective signs, duration of these signs, side effects, crash
- Increase by 18 mg every 3-4 weeks until either:
 - Symptom remission for at least 6-8 hours without intolerable side effects
 - Reaching max of 72 mg

What do they need?



Amphetamine/dextroamphetamine extended-release 10 mg QAM for 3-4 weeks

- Evaluate benefit: objective signs, duration of these signs, side effects, crash
- Increase by 5-10 mg every 2-3 weeks until either :
 - Symptom remission for at least 6-8 hours without intolerable side effects
 - Reaching a max of 40 mg

What do they need?



Lisdexamfetamine 30 mg QAM for 3-4 weeks

- Evaluate benefit: objective signs, duration of these signs, side effects, crash
- Increase by 10 mg every 2-3 weeks until:
 - Symptom remission for at least 6-8 hours without intolerable side effects
 - Max is 70 mg

2nd and 3rd line options



FDA-approved non-stimulant options:
Atomoxetine- approval for monotherapy

Guanfacine ER- adjunct or monotherapy for children

Clonidine ER- adjunct or monotherapy for children

Off label:
Bupropion
Modafinil

When to deprescribe

- 1) The diagnosis of ADHD is deemed incorrect upon reevaluation unless another stimulant-responsive condition is evident
- 2) Cognitive complaints have other more likely etiologies for which stimulant medications are inappropriate
- 3) Cognitive benefits are absent
- 4) Stimulant medications exacerbate medical or other psychiatric comorbidities
- 5) Adverse effects, if present, are non-remediable
- 6) Stimulant medications are misused
- 7) Untreated comorbid non-cannabis substance use disorders are present

How to deprescribe

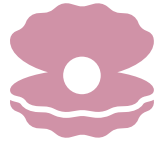
Remind Pt of clinical diagnosis discussion

No taper needed*

Re-evaluate 1-3 months

Alternatives

Clinical pearls



How to approach:

Historical diagnosis

"It's the only thing that helps"

Therapy

Cannabis

Motivation

What's out:

Drug holidays

Stimulant contracts

Universal/regular drug testing

Stopping at milestones

Avoiding if SUD

Reasonable times to refer

Uncertain of diagnosis

Co-morbid psychiatric diagnoses
(including previous or active SUD)

Non-response or limiting side effects
to 1st line agents

Extremes of age

Referral prep: Labs, OSA, TSH

Summary- ADHD medication

Who needs it: people meeting criteria with clear functional impairment looking for treatment

Why: life long neurodevelopmental disorder that responds well to low risk medications with both short term benefits and reduction in all cause mortality

What: long acting formulations (methylphenidate ER 18 mg daily, Adderall XR 10 mg daily)

When to deprescribe: new information changes your formulation, intolerable side effects/lack of benefit, concerns for substance use/diversion

How to deprescribe: no need to taper stimulants, share what you're willing to do/offer

sources

Greenhill LL, Pliszka S, Dulcan MK, Bernet W, Arnold V, Beitchman J, Benson RS, Bukstein O, Kinlan J, McClellan J, Rue D, Shaw JA, Stock S; American Academy of Child and Adolescent Psychiatry. Practice parameter for the use of stimulant medications in the treatment of children, adolescents, and adults. *J Am Acad Child Adolesc Psychiatry*. 2002 Feb;41(2 Suppl):26S-49S. doi: 10.1097/00004583-200202001-00003. PMID: 11833633.

Goodman DW, Mago R, Citrome L, Swartz HA, McIntyre RS, Freeman MP, Clayton AH, Kasper S, Vieta E, Williams AR, Frye MA, Gitlin MJ, Cohen LJ, Correll CU, Gorwood P, Iosifescu DV, Jha MK, Kupka R, Macaluso M, Malhi GS, Mitchell PB, Bhatt S, Tohen M, Nierenberg AA, Sajatovic M, Thase ME, Zohar J, Aaronson ST, Young JL, Goldberg JF. The American Society of Clinical Psychopharmacology task force consensus statement on the deprescribing of stimulant medications in adults with ADHD*. *Eur Neuropsychopharmacol*. 2026 Oct;111:112863. doi: 10.1016/j.euroneuro.2026.112863. Epub 2026 May 20. PMID: 42160906.

Han B, Jones CM, Volkow ND, Rikard SM, Dowell D, Einstein EB, Guy GP, Tomoyasu N, Ko J, Baldwin G, Olsen Y, Compton WM. Prescription Stimulant Use, Misuse, and Use Disorder Among US Adults Aged 18 to 64 Years. *JAMA Psychiatry*. 2025 Jun 1;82(6):572-581. doi: 10.1001/jamapsychiatry.2025.0054. PMID: 40105821; PMCID: PMC11923773.

Swanson, J., Baler, R. & Volkow, N. Understanding the Effects of Stimulant Medications on Cognition in Individuals with Attention-Deficit Hyperactivity Disorder: A Decade of Progress. *Neuropsychopharmacol* 36, 207–226 (2011). <https://doi.org/10.1038/npp.2010.160>

Bush G. Attention-deficit/hyperactivity disorder and attention networks. *Neuropsychopharmacology*. 2010 Jan;35(1):278-300. doi: 10.1038/npp.2009.120. PMID: 19759528; PMCID: PMC3055423.

Purper-Ouakil, D., Ramoz, N., Lepagnol-Bestel, AM. et al. Neurobiology of Attention Deficit/Hyperactivity Disorder. *Pediatr Res* 69, 69–76 (2011). <https://doi.org/10.1203/PDR.0b013e318212b40f>

Sibley MH, Arnold LE, Swanson JM, Hechtman LT, Kennedy TM, Owens E, Molina BSG, Jensen PS, Hinshaw SP, Roy A, Chronis-Tuscano A, Newcorn JH, Rohde LA; MTA Cooperative Group. Variable Patterns of Remission From ADHD in the Multimodal Treatment Study of ADHD. *Am J Psychiatry*. 2022 Feb;179(2):142-151. doi: 10.1176/appi.ajp.2021.21010032. Epub 2021 Aug 13. PMID: 34384227; PMCID: PMC8810708.

Quinn PD, Chang Z, Hur K, Gibbons RD, Lahey BB, Rickert ME, Sjölander A, Lichtenstein P, Larsson H, D'Onofrio BM. ADHD Medication and Substance-Related Problems. *Am J Psychiatry*. 2017 Sep 1;174(9):877-885. doi: 10.1176/appi.ajp.2017.16060686. Epub 2017 Jun 29. PMID: 28659039; PMCID: PMC5581231