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An outreach service for Medicaid providers to help identify and prevent potential gaps in evidence-based care, as well as detect fraud, abuse, overuse or inappropriate use.

November 2024

MEDICATION MANAGEMENT OF ADULT ATTENTION-DEFICIT/HYPERACTIVITY DISORDER (ADHD) IN PRIMARY CARE

https://schealthviz.sc.edu/tipsc-1/

PICK UP QUICK TIPS ON...treating ADHD in adults based on comorbidities and patient characteristics

Monitor patients for functional and symptomatic progress toward treatment goals and medication tolerability.

QUICK tip SC

Engage patients in good sleep habits. As many as 3 out of 5 adults with ADHD report sleep problems and poor sleep makes it harder to manage ADHD symptoms.

QUICK FACTS TO CONSIDER

- ADHD **often persists** into adulthood with hyperactive symptoms usually manifesting in a more subtle way and inattentive symptoms persisting.
- Undiagnosed ADHD **may emerge** more clearly in adults with the increasing demands of higher learning, work, or family responsibilities.
- Different genders may present with different symptoms; ADHD is thought to be underrecognized and **underdiagnosed in females.**
- Initiation of ADHD medications (stimulants and non-stimulants) in adults has been associated with a **reduction in mortality** from accidental injuries and other unnatural causes.

FORMAL RATING SCALES AID AT BASELINE AND ONGOING

Assess results from a formal rating scale, input from other sources (e.g., partner, co-worker, family member), and a full clinical interview during your baseline assessment – *rating scale results alone are not enough for an official diagnosis.*

Engage patients in conversations to identify what personal needs led them to ask for medication. Agree on SMART (Specific, Measurable, Achievable, Realistic, and Timely) goals[1] along with an action plan that addresses what they desire to achieve with treatment.

Use a combination of results from shorter-version rating scales and progress on SMART goals for ongoing monitoring of functional and symptomatic progress for you and your patient.

SELECT SELF-REPORT RATING SCALES FOR USE IN ADULT ADHD

All scales are validated for use during baseline assessment

Tool	Number of Questions	Time to Completion	Observer Form[2]	Comments
Adult ADHD Self-Report Scale 6-Question Screener (ASRS-v1.1)[3]	6	3 minutes	N	Aligns with DSM-IV criteria; Easily scored (positive screen ≥ 14); Translated into 20 languages; Free and easily accessible online: https://www.hcp.med.harvard.edu/ncs/asrs.php
Barkley Deficits in Executive Functioning Scale (BDEFS)	20 (screen) 89 (long)	4 – 5 min 15 – 20 min	Y	Not specific to ADHD – beneficial in detecting executive function impairments in ADHD and other frontal lobe disorders; Long scale scoring differs per age range; For purchase
Weiss Functional Impairment Rating Scale – Self Report (WFIRS- S)	69	5-7 minutes	Y[4]	Detects functional improvement (total score of ≥ 13 considered significant improvement); Translated into 18 languages; For purchase

1. SMART goal example: set a 5-minute timer to get started (and keep going) on a boring task 5 days a week. **2.** In addition to self-report patient form. **3.** ASRSv1.1 18-item symptom checklist and ASRS-5 6-item screener (aligns with DSM-V) also available. **4.** Parent-specific observer form.

MULTIPLE VISITS AND CONVERSATIONS HELP INFORM TREATMENT

Let your patients know upfront there will be **multiple visits prior to a stimulant** prescription. Two to three office visits allow time to understand how symptoms impact daily life and any alternative reasons for requesting a stimulant (e.g., weight loss, performance, intentional or unintentional help coping with symptoms of another mental health condition). Be curious and engage patients in conversations to:

- Educate on adult ADHD and the **multimodal approach** to treatment (i.e., psychoeducation, non-drug strategies, and medication)
- Ask what symptoms they expect medication to improve and how they hope it will **impact their lives**
- Ask about current medications and supplements and educate on **risks of self-medicating** to manage symptoms (e.g., caffeine, cigarettes, alcohol, marijuana)
- Understand that a positive emotional experience or improved productivity on a stimulant is not diagnostic of ADHD

NON-DRUG STRATEGIES ARE FOUNDATIONAL TO ALL TREATMENT PLANS

Adults with ADHD often need assistance developing healthy habits and routines to improve symptoms and executive functioning. During the initial visit, help patients identify non-drug strategies they would be willing to incorporate into their daily lives and encourage them to **get started on one right away** – even before starting any medications.

NON-DRUG STRATEGIES FOR MANAGING ADHD

Strategy	Self-Guided Resources	Tips for Incorporating Strategy / Comments
Cognitive Behavioral Therapy (CBT)	https://bit.ly/free_CBT	Try the FreeCBT app when stuck in an "all or nothing" mindset; Formal therapy yields benefits after 12 to 15 one-hour sessions but many patients continue therapy; For use as adjunctive treatment with medication
Regular Exercise	https://www.nike.com/ntc-app	Incorporate an enjoyable aerobic exercise (e.g., walking, running, biking, swimming) into your daily routine; As little as 10 minutes of aerobic exercise may improve impulsivity; Add variety – don't do the same exercise everyday (e.g., try a group class or exercise outdoors)
Good Nutrition	https://bit.ly/Nutrition_Label_Facts https://add.org/adhd-diet/	Poor diet choices (e.g., fast food, sugary drinks) may be associated with adult ADHD symptoms; check labels for "Added Sugars"; Add healthy eating habits – one habit at a time; Consider increasing protein (e.g., fish, low-fat dairy), vegetables, whole grains, fruit
Mindfulness	https://www.youtube.com/watch?v=y5EqO8CQ_cQ https://mobile.va.gov/app/mindfulness-coach	Schedule 5 to 10 minutes a day to focus on your breathing; use an alarm to keep track of time; Practice by keeping focus on the sensations and actions while performing routine activities like brushing your teeth, washing dishes, or walking
Healthy Sleep Habits	https://bit.ly/ADHD_Sleep_Handout https://mobile.va.gov/app/cbt-i-coach	Go to bed at the same time and set an alarm to wake up at the same time every day (even on weekends); Place cell phone and electronic devices away from bed; Follow the same soothing routine every night and end the evening quietly with low light and low activity

PATIENTS WITH ADHD OFTEN HAVE MENTAL HEALTH COMORBIDITES

Establish all co-occurring mental health conditions PRIOR to prescribing ADHD meds to determine the best order of treatment as part of an individualized treatment plan

Consider **slower dose titrations and more frequent monitoring** for adverse effects, response to treatment, and significant drug interactions when initiating ADHD medications

Screen patients for ADHD who have symptoms of other mental health conditions (e.g., anxiety) and are **not responding to treatment** or present with functional difficulties and problems that suggest ADHD

PRIMARY CARE CONSIDERATIONS FOR SELECT MENTAL HEALTH COMORBIDITIES

Prioritize the presence of suicidal and violent thoughts

Condition (Select Screening Tool)	**What to Treat First**	**Medication/Treatment Considerations**
Bipolar Disorder (BD) (MDQ and PHQ-9)	BD	Offer ADHD medication when therapeutic levels of a mood stabilizer are established (α_2 agonists [e.g., clonidine] can be initiated with mood stabilizer); Discontinue stimulant if mania is triggered; once mood is stabilized cautiously restart stimulant (start low, go slow); Refer to specialist when appropriate
Substance Use Disorder (SUD) (Single-Item Screen for Polysubstance Use)[1]	Active, severe SUD	Consider atomoxetine or stimulant formulations with lower abuse potential (e.g., long-acting methylphenidate, lisdexamfetamine); Consider co-management with SUD treatment team; Refer to specialist when appropriate
Depression (PHQ-9)	Moderate to severe depression, otherwise most impairing disorder	Consider combination of stimulant + SSRI or SNRI and monitor for serotonin syndrome; Consider treatment with bupropion; Atomoxetine monotherapy not recommended; Dysthymia and mild depression may benefit from treating ADHD first
Anxiety (GAD-7)	Most impairing disorder	Consider combination of stimulant + SSRI or SNRI (consider starting the SSRI/SNRI first and add stimulant when anxiety symptoms have improved) and monitor for serotonin syndrome; Atomoxetine may be beneficial for both ADHD and anxiety; Stimulants may increase anxiety – titrate slowly
Sleep Disorders (Epworth Sleepiness Scale)	Most impairing disorder	Identify if sleep disturbance[2] existed prior to medication; Offer non-drug options first – sleep hygiene education[3] and CBT-i; Take stimulant dose earlier in day – consider short-acting formulation or switch to non-stimulant (e.g., atomoxetine); Consider short-term (≤ 4 weeks) adjunctive treatment with sleep medication[4]

1. How many times in the past year have you had 5 (male) / 4 (female) or more drinks in a day? (> 0 positive). How many times in the past year have you used an illegal drug or prescription medication for non-medical reasons (for example, because of the experience or feeling it caused)? (> 0 positive). **2.** Screen for obstructive sleep apnea if symptoms of sleep-related breathing disorders. **3.** Sleep hygiene is not a stand-alone treatment for chronic insomnia disorder. **4.** Strength of evidence for sleep agents is weak.

KEY: CBT-i Cognitive Behavioral Therapy – insomnia; **GAD-7** General Anxiety Disorder 7-item scale; **MDQ** Mood Disorder Questionnaire; **PHQ-9** Patient Health Questionnaire 9-item depression scale; **SSRI** Selective serotonin reuptake inhibitor; **SNRI** Serotonin and norepinephrine reuptake inhibitor

SELECT STIMULANT AND NON-STIMULANT MEDICATIONS FOR

Remember to check SCRIPTS (PDMP or NARX report) prior to prescribing a stimulant

SCREEN for PRE-EXISTING CONDITIONS including cardiac disease, mental health conditions (e.g., bipolar disorder, psychosis), and pregnancy/lactation **PRIOR** to starting any medication

FOLLOW-UP QUICKLY (1-week) after initiating stimulant medication to titrate dose based on response and tolerability; non-stimulant medications may take up to 4 weeks to see response

SELECT FDA-APPROVED STIMULANT ADHD MEDICATION DOSING GUIDELINES[1]

Start low and titrate weekly based on response and tolerability[2]

Medication (Brand Example) (%IR/%DR)	**Initial Dose** (*Weekly Titration*)	**Onset** (minutes)	**Duration** (hours)	**FDA Max Daily Dose**	**Off-Label Max Daily Dose**	**Misuse/ Abuse Potential**	**Comments**
METHYLPHENIDATE							
Short-Acting *(Twice Daily Dosing)*							
Methylphenidate (Ritalin®)	5-10 mg (*5-10 mg/day*)	20-30	3-5	60 mg	100 mg	++	Take 30-45 minutes before meals
Dexmethylphenidate (Focalin®)	2.5 mg (*2.5-5 mg/day*)	30	3-5	20 mg[3]	50 mg		High-fat meal delays absorption by 1.5 hours
Intermediate-Acting *(Once Daily Dosing)*							
Methylphenidate ER[4] (Methylin ER™)[5]	20 mg (*10-20 mg/day*)	60-90	3-8	60 mg	100 mg	+	Sustained-release tablet; May require BID dosing
Long-Acting *(Once Daily Dosing)*							
Methylphenidate[4] (Ritalin LA®) (50/50)	10-20 (*10 mg/day*)	100	6-8	60 mg[3]	100 mg	+	Mimics BID dosing; High-fat meal delays first peak
Methylphenidate[4] (Concerta®) (22/78)	18-36 mg (*18 mg/day*)	30-60	8-12	72 mg	108 mg		Tablet shell may be seen in stool
Dexmethylphenidate[4] (Focalin XR®)(50/50)	10 mg (*10 mg/day*)	30	9-12	40 mg	50 mg		Mimics BID dosing; High-fat meal delays first peak
AMPHETAMINES							
Short-Acting *(Twice Daily Dosing)*							
Mixed Amphetamine Salts (Adderall®)	5 mg (*5 mg/day*)	30	4-6	40 mg[3]	60 mg	+++	
Intermediate-Acting *(Once Daily Dosing)*							
Dextroamphetamine[4] (Dexedrine Spansules®)	5 mg (*5 mg/day*)	60-90	5-8	40 mg[3]	60 mg	++	Sustained-release capsule; May require BID dosing
Long-Acting *(Once Daily Dosing)*							
Mixed Amphetamine Salts[4] (Adderall XR®)	10-20 mg (*10 mg/day*)	30	8-12	40 mg	60 mg	++	Mimics BID dosing; Food delays peak by 2-3 hours
Mixed Amphetamine Salts[4] (Mydayis®)	12.5-25 mg (*12.5 mg/day*)	30	12-16	50 mg	–	++	Longest duration; Food delays peak by 5 hours
Lisdexamfetamine[6] (Vyvanse®)	30 mg (*10-20 mg/day*)	90-120	12-14	70 mg	–	+	High-fat meal delays absorption by about 1 hour; Less weight loss

1. Other formulations available (e.g., Azstarys™ [longest acting dexmethylphenidate], Jornay PM® [methylphenidate with 12-hour onset]). **2.** Common side effects are insomnia, appetite loss, headache, dry mouth, weight loss; refer to package inserts for more detail on adverse effects, drug interactions, and medication monitoring. **3.** Based on dosing in children. **4. Do not crush, split, or chew. 5.** Generic only available. **6.** Amphetamine pro-drug.

KEY: **+** Lower risk, **++** Some risk, **+++** Higher risk; **BID** Twice daily; **DR** Delayed release; **ER/XL/XR** Extended release; **FDA** Food and Drug Administration; **GI** Gastrointestinal; **IR** Immediate release; **LA** Long acting; **SR** Sustained release; **QHS** At bedtime

ADULT ATTENTION-DEFICIT/HYPERACTIVITY DISORDER (ADHD)

(C-II) and every three months thereafter (https://southcarolina.pmpaware.net/login)

MONITOR ALL PATIENTS for new mood, anxiety, substance use disorder, psychotic or manic symptoms, suicidal behavior or ideation, aggressive behavior (new or worsening), appetite, irritability/mood swings, and changes in cardiac conditions

AGREE ON SMART GOALS (e.g., create 25-minute work blocks without distractions followed by a five minute break – repeat 4 cycles then enjoy a 15-30 minute break) to assess treatment response

SELECT NON-STIMULANT ADHD MEDICATION DOSING GUIDELINES[1]

Non-stimulant medications have no abuse potential

Medication (Brand Example)	**FDA Approved in Adults**	**Initial Dose** (*Titration*)	**Onset** (weeks)	**Duration** (hours)	**FDA Max Daily Dose** *(Off-Label Max Daily Dose)*	**Comments**
Atomoxetine[2,3] (Strattera®)	Y	40 mg QAM *(May increase to 80 mg/day in 1-2 divided doses after minimum of 3 days)*	1-4	24	100 mg *(120-160 mg)*	Divided doses and slower titrations can minimize GI side effects (nausea); High-fat meal delays peak by 3 hours; Do not open capsule
Viloxazine ER[3] (Qelbree®)	Y	200 mg QAM *(200 mg weekly)*	1-2	24	600 mg *(–[4])*	Better GI profile compared to atomoxetine but greater rates of insomnia and somnolence; Discontinue in pregnancy
Clonidine ER[3] (Kapvay™)	N	0.1 mg QHS *(0.1 mg weekly)*	1-2	12-14	*(0.4 mg)*[5]	Do not stop or abruptly taper off; Not a 1:1 conversion between clonidine products; Higher rates of somnolence and hypotension compared to guanfacine; Option for adjunct use with stimulant
Clonidine (Catapress®)	N	0.1 mg QHS *(0.1 mg/day every 2-3 days)*[6]	2-8	4-6	*(0.4 mg)*[5]	
Guanfacine ER[3] (Intuniv®)	N	1 mg daily *(1 mg weekly)*	2-3	12-24	*(7 mg)*[5]	Do not stop or abruptly taper off; Mimics BID dosing; High-fat meals increase exposure and risk of side effects; Option for adjunct use with stimulant (4 mg max)
Guanfacine[3] (Tenex™)	N	1 mg QHS *(1 mg every 3-4 days)*[7]	2-8	6-8	*(4 mg)*[5]	Do not stop or abruptly taper off; Not a 1:1 conversion to guanfacine ER
Bupropion[3] (Wellbutrin SR®)[8]	N	100 mg QAM *(increase to 100 mg BID after 1 week)*[9]	1-2	24-48	*(400 mg)*[5]	Tolerability varies
Bupropion[3] (Wellbutrin XL®)[8]	N	150 mg for 1 week *(increase to 300 mg daily after 1 week for 3 weeks then to 450 mg if needed)*	1-2	24-48	*(450 mg)*[5]	

1. Other non-stimulant pharmacotherapy options with limited/inconsistent evidence are desipramine, venlafaxine, desvenlafaxine, imipramine, modafinil, brexpiprazole, low-dose aripiprazole and low-dose risperidone, lamotrigine, armodafinil. **2.** Discontinue if presence of jaundice or symptoms of lab evidence of liver injury. **3. Do not crush, chew, or split. 4.** No literature available to support doses above FDA maximum. **5.** Maximum daily dose for FDA-approved indications. **6.** For weight ≤ 45 kg initial dose is 0.05 mg QHS; titration is 0.05 mg/day every 2-3 days. **7.** For weight ≤ 45 kg initial dose is 0.5 mg and titration is 0.5 mg/day every 3-4 days. **8.** Doses of 400-450 mg are associated with best efficacy. **9.** Based on response and tolerability, may increase in 100 mg/day increments at intervals of 3 to 4 weeks up to 200 mg twice daily.

STIMULANT DIVERSION: STAY PATIENT-CENTERED AND VIGILANT

Help Reduce Prescription Stimulant Diversion

- Share a patient provider agreement (PPA) with clearly established boundaries and patient expectations
- Check SCRIPTS Narx report at baseline and periodically
- Educate on safe med disposal and storage
- Obtain urine drug screens for all patients
- Utilize longer-acting stimulants or non-stimulants
- Screen for unintended stimulant medication effects (e.g., euphoria, elevated mood)

Participate in Harm-Reduction Strategies

- Offer naloxone to patients using nonprescribed stimulants to protect the patient and show you care
- Warn patients about risks of fentanyl-laced counterfeit stimulant medications (e.g., Adderall®)
- Refer to a specialist if stimulant use disorder is suspected

Warning Signs for Prescription Stimulant Misuse or Diversion

- Symptoms associated with heavier use or intoxication (e.g., agitation, psychosis, shortness of breath, palpitations, euphoria)
- A pattern of losing or early re-ordering of prescriptions
- SCRIPTS check identifies unexpected medication activity
- Urine drug screen contains unexpected result
- Misuse of other drugs (e.g., cocaine, alcohol)
- Non-oral use of stimulants

(Adapted with permission from Veterans Health Administration PBM Academic Detailing Service)

A lethal dose of fentanyl was found in 7 out of 10 counterfeit pills seized by the FDA from the illegal drug market.

REFERENCE LIST

ADHD Guideline Development Group. Australian evidence-based clinical practice guideline for Attention Deficit Hyperactivity. Melbourne: Australasian ADHD Professionals Association; 2022. Available from: https://adhdguideline.aadpa.com.au/wp-content/uploads/2024/06/Australian-Clinical-Practice-Guideline-For-ADHD-June-2024.pdf.

ADHD in Adults: Good practice guidelines [Internet]. Edinburgh, UK: Royal College of Psychiatrists in Scotland; 2017 [cited 2024 Nov 30]. Available from: https://www.rcpsych.ac.uk/docs/default-source/members/divisions/scotland/adhd_in_adultsfinal_guidelines_june2017.pdf?sfvrsn=40650449_2

ADHD – Overview & Drug comparison chart [Internet]. Saskatchewan, CA: RxFiles 14th Edition; 2023 July [cited 2024 Nov 21]. Available from: https://www.rxfiles.ca/RxFiles/uploads/documents/members/cht-adhd.pdf

Aizenstros J et al. Sleep and ADHD: An evidence-based guide to assessment and treatment. 1st ed. London, UK: Academic Press, an imprint of Elsevier; c2019. Chapter 12, Sleep in adults with ADHD – Etiology, impact, and treatments; p. 295-330.

Almagor D et al. Canadian ADHD Practice Guidelines. Canadian ADHD Resource Alliance (CADDRA), 2020 [cited 2024 Jan 30]. Available from: Canadian-ADHD-Practice-Guidelines-4.1-January-6-2021.pdf (caddra.ca)

Attention deficit hyperactivity disorder: diagnosis and management. London: National Institute for Health and Care Excellence (NICE); 2019 Sep. PMID: 29634174.

Attention-deficit/hyperactivity disorder (ADHD) in adults: Academic detailing quick reference guide [Internet]. Washington DC: VA PBM Academic Detailing Services; 2022 July [cited 2024 Nov 30]. Available from: https://www.pbm.va.gov/PBM/AcademicDetailingService/Documents/508/10-1659_ADHD_QRG_P97097.pdf

Auiler JF, Liu K, Lynch JM, Gelotte CK. Effect of food on early drug exposure from extended-release stimulants: results from the Concerta, Adderall XR Food Evaluation (CAFE) Study. Curr Med Res Opin. 2002;18(5):311-6. doi: 10.1185/030079902125000840. PMID: 12240794.

Biederman J et al. Age-dependent decline of symptoms of attention deficit hyperactivity disorder: impact of remission definition and symptom type. Am J Psychiatry. 2000 May;157(5):816-8. doi: 10.1176/appi.ajp.157.5.816. PMID: 10784477.

Brams M et al. Duration of effect of oral long-acting stimulant medications for ADHD throughout the day. Curr Med Res Opin. 2010 Aug;26(8):1809-25. doi: 10.1185/03007995.2010.488553. PMID: 20491612.

Brent D et al. Attention deficit hyperactivity disorder in adults: Treatment overview. In: UpToDate, Connor RF (Ed), Wolters Kluwer [cited 2024 Nov 21]. Available from: https://www.uptodate.com/contents/attention-deficit-hyperactivity-disorder-in-adults-treatment-overview?search=%20Attention%20deficit%20hyperactivity%20disorder%20in%20adults:%20-Treatment%20overview&source=search_result&selectedTitle=1~150&usage_type=default&display_rank=1

Bukstein OG. Attention Deficit Hyperactivity Disorder in Adults: Epidemiology, Clinical Features, Assessment, and Diagnosis [Internet]. UpToDate. 2023 Nov [cited 2024 Nov 30]. Available from: https://www.uptodate.com/contents/attention-deficit-hyperactivity-disorder-in-adults-epidemiology-clinical-features-assessment-and-diagnosis?search=adhd&source=search_result&selectedTitle=3%7E150&usage_type=default&display_rank=3

Community Behavioral Health Services (CBHS) Pharmacy Services Manual [Internet]. San Francisco (CA): San Francisco Health Network Behavioral Health Services, Medication Use Improvement Committee; c2017. Guideline for evaluation and treatment of attention-deficit/hyperactivity disorder (ADHD) in adults; [cited 2024 Nov 30]. p 84-96.

Cortese S et al. Comparative efficacy and tolerability of medications for attention-deficit hyperactivity disorder in children, adolescents, and adults: a systematic review and network meta-analysis. Lancet Psychiatry. 2018 Sep;5(9):727–38. doi.org/10.1016/S2215-0366(18)30269-4

Dinu LM et al. The Effects of Different Exercise Approaches on Attention Deficit Hyperactivity Disorder in Adults: A Randomised Controlled Trial. Behav Sci (Basel). 2023 Feb 2;13(2):129. doi: 10.3390/bs13020129. PMID: 36829357; PMCID: PMC9952527.

Diagnosis of ADHD in Adults [Internet]. Lanham (MD): CHADD's National Resource Center on ADHD; 2017 [cited 2024 Nov 30]. Available from:: https://d393uh8qb46l22.cloudfront.net/wp-content/uploads/2018/05/Diagnosis.pdf.

Dopheide JA, Pliszka SR. Attention-deficit-hyperactivity disorder: an update. Pharmacotherapy. 2009 Jun;29(6):656-79. doi: 10.1592/phco.29.6.656. PMID: 19476419.

Ermer JC et al. Lisdexamfetamine Dimesylate: Prodrug Delivery, Amphetamine Exposure and Duration of Efficacy. Clin Drug Investig. 2016 May;36(5):341-56. doi: 10.1007/s40261-015-0354-y. PMID: 27021968; PMCID: PMC4823324.

Emergency Preparedness and Response: Disrupted Access to Prescription Stimulant Medications Could Increase Risk of Injury and Overdose [Internet]. Centers For Disease Control and Prevention (via CDC Health Alert Network). 2024 June 13 [cited 2024 Nov 30]. Available from: https://emergency.cdc.gov/han/2024/han00510.asp

Fadeuilhe C et al. Insomnia Disorder in Adult Attention-Deficit/Hyperactivity Disorder Patients: Clinical, Comorbidity, and Treatment Correlates. Front Psychiatry. 2021 May 26;12:663889. doi: 10.3389/fpsyt.2021.663889. PMID: 34122179; PMCID: PMC8187558

Gray A et al. ADHD in adults. Centre for Effective Practice. May 2020. Available from: https://cep.health/media/uploaded/CEP_AdultADHD_2020.pdf

Guy-Evans O. Mindfulness and ADHD: Techniques & Effectiveness [Internet]. London: Simply Psychology [updated 2024 Feb 12; cited 2024 Jul 8]. Available from: https://www.simplypsychology.org/mindfulness-for-adhd-how-it-works.html.

Huang H et al. Approach to Evaluating and Managing Adult Attention-Deficit/Hyperactivity Disorder in Primary Care. Harv Rev Psychiatry. 2020 Mar/Apr;28(2):100-106. doi: 10.1097/HRP.0000000000000248. PMID: 32134834.

Identification and management of attention-deficit/hyperactivity disorder (ADHD) in adults: Academic detailing clinician guide [Internet]. Washington DC: VA PBM Academic Detailing Services; 2022 July [cited 2024 Nov 30]. Available from: https://www.pbm.va.gov/PBM/AcademicDetailingService/Documents/508/10-1520_ADHD_ClinicianGuide_P97040.pdf

Jasinski D, Krishnan S. Human pharmacology of intravenous lisdexamfetamine dimesylate: abuse liability in adult stimulant abusers. Journal of Psychopharmacology. 2009;23(4):410-418. doi:10.1177/0269881108093841

Kamradt JM et al. Barkley Deficits in Executive Functioning Scale (BDEFS): Validation in a Large Multisite College Sample. Assessment. 2021 Apr;28(3):964-976. doi: 10.1177/1073191119869823. Epub 2019 Aug 20. PMID: 31431045; PMCID: PMC8010583.

Kessler RC et al. Patterns and predictors of attention-deficit/hyperactivity disorder persistence into adulthood: results from the national comorbidity survey replication. Biol Psychiatry. 2005 Jun 1;57(11):1442-51. doi: 10.1016/j.biopsych.2005.04.001. PMID: 15950019; PMCID: PMC2847347.

Kessler, R.C. et al. (2005). The World Health Organization Adult ADHD Self-Report Scale (ASRS). Psychological Medicine, 35(2), 245-256. Copyright © New York University and Ronald C. Kessler, PhD. All rights reserved

Kooij JJS et al. Updated European Consensus Statement on diagnosis and treatment of adult ADHD. Eur Psychiatry. 2019 Feb; 56:14-34. doi: 10.1016/j.eurpsy.2018.11.001. Epub 2018 Nov 16. PMID: 30453134.

Lara M. The Exercise Prescription for ADHD [Internet]. Lanham, MD: Children and Adults with Attention-Deficit/Hyperactivity Disorder (CHADD) Attention Magazine. 2012 June [cited 2024 Nov 30]. Available from: https://chadd.org/attention-article/the-exercise-prescription-for-adhd/

LaBossier NJ, Hadland SE. Stimulant misuse among youth. Curr Probl Pediatr Adolesc Health Care. 2022 Sep;52(9):101265. doi: 10.1016/j.cppeds.2022.101265. Epub 2022 Sep 29. PMID: 36184490; PMCID: PMC10102888.

Lee L et al. Bioavailability of modified-release methylphenidate: influence of high-fat breakfast when administered intact and when capsule content sprinkled on applesauce. Biopharm Drug Dispos. 2003 Sep;24(6):233-43. doi: 10.1002/bdd.358. PMID: 12973820.

Li L, Zhu N, Zhang L, Kuja-Halkola R, D'Onofrio BM, Brikell I, Lichtenstein P, Cortese S, Larsson H, Chang Z. ADHD Pharmacotherapy and Mortality in Individuals With ADHD. JAMA. 2024 Mar 12;331(10):850-860. doi: 10.1001/jama.2024.0851. PMID: 38470385; PMCID: PMC10936112.

Loskutova N et al. Adult ADHD Assessment and Diagnosis Approach [Internet]. Leawood (KS): AAFP National Research Network; 2019 [updated 2019 Aug 30; [cited 2024 Nov 30]. Available from: https://www.aafp.org/dam/AAFP/documents/patient_care/adhd_toolkit/adhd19-algorithm.pdf.

Millichap JG, Yee MM. The diet factor in attention-deficit/hyperactivity disorder. Pediatrics. 2012 Feb;129(2):330-7. doi: 10.1542/peds.2011-2199. Epub 2012 Jan 9. PMID: 22232312.

Newcorn JH et al. Clinical responses to atomoxetine in attention-deficit/hyperactivity disorder: the Integrated Data Exploratory Analysis (IDEA) study. J Am Acad Child Adolesc Psychiatry. 2009 May;48(5):511-518. doi: 10.1097/CHI.0b013e31819c55b2. PMID: 19318988.

Non-drug treatments for adult ADHD. [Internet]. Boston (MA): Harvard Health Publishing; 2023 Aug 8 [cited 2024 Jul 28]. Available from: https://www.health.harvard.edu/mind-and-mood/non-drug-treatments-for-adult-adhd.

Raible H, D'Souza MS. Extended-Release Viloxazine for the Treatment of Attention-Deficit Hyperactivity Disorder in School-Age Children and Adolescents. Ann Pharmacother. 2023 Dec;57(12):1436-1448. doi: 10.1177/10600280231163252. Epub 2023 Apr 5. PMID: 37021356.

Ramsay JR. Assessment and monitoring of treatment response in adult ADHD patients: current perspectives. Neuropsychiatr Dis Treat. 2017 Jan 27;13:221-232. doi: 10.2147/NDT.S104706. PMID: 28184164; PMCID: PMC5291336.

Robert S et al. Attention-Deficit/Hyperactivity Disorder. Conn's Current Therapy 2024. 6th edition. Kellerman R D, Rakel D, Heidelbaugh J J, & Lee E M (Eds.). Elsevier; 2023. p 1324-1333. [cited 2024 Nov 30]. Available from: https://www.clinicalkey.com/#!/content/book/3-s2.0-B9780443121517003054

Sherman C et al.How CBT dismantles ADHD negativity: Cognitive behavioral therapy overview [Internet]. Attitude - WebMD; c1998-2024 [reviewed 2019 Nov 4; cited 2024 Jul 8]. Available from: https://www.additudemag.com/cognitive-behavioral-therapy-for-adhd/.

Simpson D, Plosker GL. Atomoxetine: a review of its use in adults with attention deficit hyperactivity disorder. Drugs. 2004;64(2):205-22. doi: 10.2165/00003495-200464020-00005. PMID: 14717619.

Stahl SM. Mechanism of action of alpha 2A-adrenergic agonists in attention-deficit/hyperactivity disorder with or without oppositional symptoms. J Clin Psychiatry. 2010 Mar;71(3):223-4. doi: 10.4088/JCP.09bs05899pur. PMID: 20331927.

Substance Abuse and Mental Health Services Administration (SAMHSA). Prescription Stimulant Misuse and Prevention Among Youth and Young Adults. Publication No. PEP21-06-01-003. Rockville, MD: National Mental Health and Substance Use Policy Laboratory. Substance Abuse and Mental Health Services Administration, 2021. Available from: https://store.samhsa.gov/sites/default/files/pep21-06-01-003.pdf.

Surman, C. ADHD in adults: a practical guide to evaluation and management. 1st ed. New York: Springer; 2013. 227 p.
Treatment and Management of ADHD in Adults [Internet]. Leawood (KS): American Academy of Family Physicians; c2024 [cited 2024 Jan 30]. Available from: https://www.aafp.org/family-physician/patient-care/prevention-wellness/emotional-wellbeing/adhd-toolkit/treatment-and-management.html.

Upadhyaya HP et al. A review of the abuse potential assessment of atomoxetine: a nonstimulant medication for attention-deficit/hyperactivity disorder. Psychopharmacology (Berl). 2013 Mar;226(2):189-200. doi: 10.1007/s00213-013-2986-z. Epub 2013 Feb 9. PMID: 23397050; PMCID: PMC3579642.

Verbeeck W et al. Bupropion for attention deficit hyperactivity disorder (ADHD) in adults. Cochrane Database Syst Rev. 2017 Oct 2;10(10):CD009504. doi: 10.1002/14651858.CD009504.pub2. PMID: 28965364; PMCID: PMC6485546.

Weiss MD. The unique aspects of assessment of adult ADHD. Prim Psychiatry. 2010;17(5):21–25

Weiss MD, Weiss JR. A Guide to the Treatment of Adults With ADHD. J Clin Psychiatry. 2004;65(Suppl 3):27-37. PMID: 15046533

Young S et al. Females with ADHD: An expert consensus statement taking a lifespan approach providing guidance for the identification and treatment of attention-deficit/ hyperactivity disorder in girls and women. BMC Psychiatry. 2020 Aug 12;20(1):404. doi: 10.1186/s12888-020-02707-9. PMID: 32787804; PMCID: PMC7422602.

Product labeling references available upon request.

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Acknowledgements: Dr. Frampton Gwynette provided clinical input and support. Chloe Bays assisted with concept design and review. The MUSC Drug Information Center assisted with background research. Call 843.792.3896 or email druginfo@musc.edu for free access to MUSC's Drug Information Center to answer provider-specific questions and requests from materials delivered.

The information contained in this summary is intended to assist primary care providers in the management of ADHD in non-pregnant adults in a primary care setting. This advice contains general recommendations and is advisory only. It is not intended to replace sound clinical judgment, nor should it be regarded as a substitute for individualized diagnosis, treatment, management, or overall care based on an individual patient's clinical conditions.