

Children's National-Pediatric Health Network

# Managing Pediatric ADHD in the Outpatient Setting 2.0

Kelly Register-Brown, MD and Elana Neshkes, MD

Pediatric **Health** Network



# A few notes about today's Grand Rounds

- All lines are muted throughout the presentation.
- Please use the Q&A to ask questions or make comments.
- We will be recording the session.
- Today's recording and materials will be posted to the PHN website three business days following the presentation:

<https://pediatrichealthnetwork.org/>

# Claiming CME Credit

1. All providers must create an account on the new platform, visit: [cme.inova.org](https://cme.inova.org)
2. Once you have an account, credit for this session can be claimed in one of two ways:
  1. Text today's session code ("NERTAS") to 703-260-9391.
  2. Visit [cme.inova.org/code](https://cme.inova.org/code) to enter today's session code ("NERTAS") on the website.

CME credit must be claimed within **30 days** of the presentation date.

# Behavioral Health Webinar Series

Join the Behavioral Health Initiative for our free, quarterly behavioral health webinars led by child and adolescent psychiatry experts! The series offers intermediate-level insights into common pediatric behavioral health issues and their management in primary care.

Webinars are open to all who wish to join.  
Recordings will be available following each session.  
CME credit will be available.

Register online at <https://pediatrichealthnetwork.org/behavioral-health-initiative/>

- Wednesday, September 11, 2024, 12:00 – 1:00 pm: Anxiety 2.0
- Wednesday, November 13, 2024, 12:00 – 1:00 pm: Disordered Eating Behaviors 2.0

# Behavioral Health Office Hours Series

We are offering exclusive Office Hours with our BHI team including child and adolescent psychiatrists. Bring your questions or problems to troubleshoot with our experts.

These office hours are now available for **all PHN members!**

Register online at <https://pediatrichealthnetwork.org/behavioral-health-initiative/>

- Wednesday, May 8, 2024, 12:00 – 1:00 pm
- Wednesday, June 5, 2024, 12:00 – 1:00 pm
- Wednesday, July 10, 2024, 12:00 – 1:00 pm
- Wednesday, August 14, 2024, 12:00 – 1:00 pm
- Wednesday, October 9, 2024, 12:00 – 1:00 pm
- Wednesday, December 11, 2024, 12:00 – 1:00 pm

# Today's Speakers



Kelly Register-Brown, MD, MSc  
Psychiatrist



Elana Neshkes, MD  
Psychiatrist  
Pediatrician

Disclosures: None

# Agenda

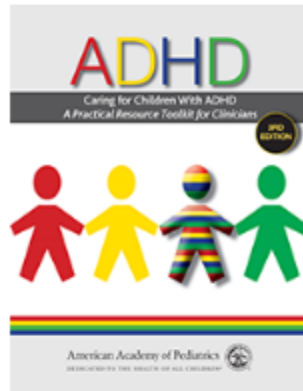
- Key resources
- Introduction to Complex ADHD
- Complex ADHD patients by age
- ADHD with co-occurring conditions
- Managing diagnostic uncertainty in complex ADHD
- Troubleshooting inadequate response to treatment in complex ADHD
- Case example

# Key Resources



# Key Resources

## Caring for Children With ADHD: A Practical Resource Toolkit for Clinicians, 3rd Edition



*William Zurhellen, MD, FAAP; Herschel R. Lessin, MD, FAAP; Eugenia Chan, MD, MPH, FAAP; Carla Counts Allan, MS, PhD; Mark Wolraich, MD, FAAP; Eli Sprecher, MD, MPP; Steven W. Evans, PhD*

Most children with ADHD have their first encounter for care within their primary clinician's practice—their "medical home."

These tools help you prepare for that encounter and beyond: readying your staff, screening, diagnosis, treatment, ongoing follow-up, and negotiating insurance payments for every step your patients need.

**Quick Links:** [Clinical Practice Guideline](#) | [Preparing Your Practice](#) | [Initial Patient Intake](#) | [Comprehensive Assessment](#) | [Vanderbilt Rating Scales](#) | [Treatment and Follow-up](#)

<https://publications.aap.org/toolkits/pages/ADHD-Toolkit>

**Pediatric Health Network**



# Key Resources

## CLINICAL PRACTICE GUIDELINE



## Clinical Practice Guideline for the Diagnosis, Evaluation, and Treatment of Attention-Deficit/Hyperactivity Disorder in Children and Adolescents

Mark L. Wolraich, MD, FAAP,<sup>a</sup> Joseph F. Hagan, Jr, MD, FAAP,<sup>b,c</sup> Carla Allan, PhD,<sup>d,e</sup> Eugenia Chan, MD, MPH, FAAP,<sup>f,g</sup> Dale Davison, MSPed, PCC,<sup>h,i</sup> Marian Earls, MD, MTS, FAAP,<sup>j,k</sup> Steven W. Evans, PhD,<sup>l,m</sup> Susan K. Flinn, MA,<sup>n</sup> Tanya Froehlich, MD, MS, FAAP,<sup>o,p</sup> Jennifer Frost, MD, FAAP,<sup>q,r</sup> Joseph R. Holbrook, PhD, MPH,<sup>s</sup> Christoph Ulrich Lehmann, MD, FAAP,<sup>t</sup> Herschel Robert Lessin, MD, FAAP,<sup>u</sup> Kymika Okechukwu, MPA,<sup>v</sup> Karen L. Pierce, MD, DFAACAP,<sup>w,x</sup> Jonathan D. Winner, MD, FAAP,<sup>y</sup> William Zurhellen, MD, FAAP,<sup>z</sup> SUBCOMMITTEE ON CHILDREN AND ADOLESCENTS WITH ATTENTION-DEFICIT/HYPERACTIVE DISORDER

[Clinical Practice Guideline: Treatment of the School-Aged Child With Attention-Deficit/Hyperactivity Disorder | Pediatrics | American Academy of Pediatrics \(aap.org\)](#)

## Society for Developmental and Behavioral Pediatrics Clinical Practice Guideline for the Assessment and Treatment of Children and Adolescents with Complex Attention-Deficit/Hyperactivity Disorder

William J. Barbaresi, MD (Guideline Panel Chair),<sup>\*</sup> Lisa Campbell, MD,<sup>†</sup> Elizabeth A. Diekroger, MD,<sup>‡</sup> Tanya E. Froehlich, MD,<sup>§</sup> Yi Hui Liu, MD, MPH,<sup>||</sup> Eva O'Malley,<sup>¶</sup> William E. Pelham Jr, PhD, ABPP,<sup>\*\*</sup> Thomas J. Power, PhD, ABPP,<sup>††</sup> Samuel H. Zinner, MD,<sup>‡‡</sup> Eugenia Chan, MD, MPH<sup>\*</sup>

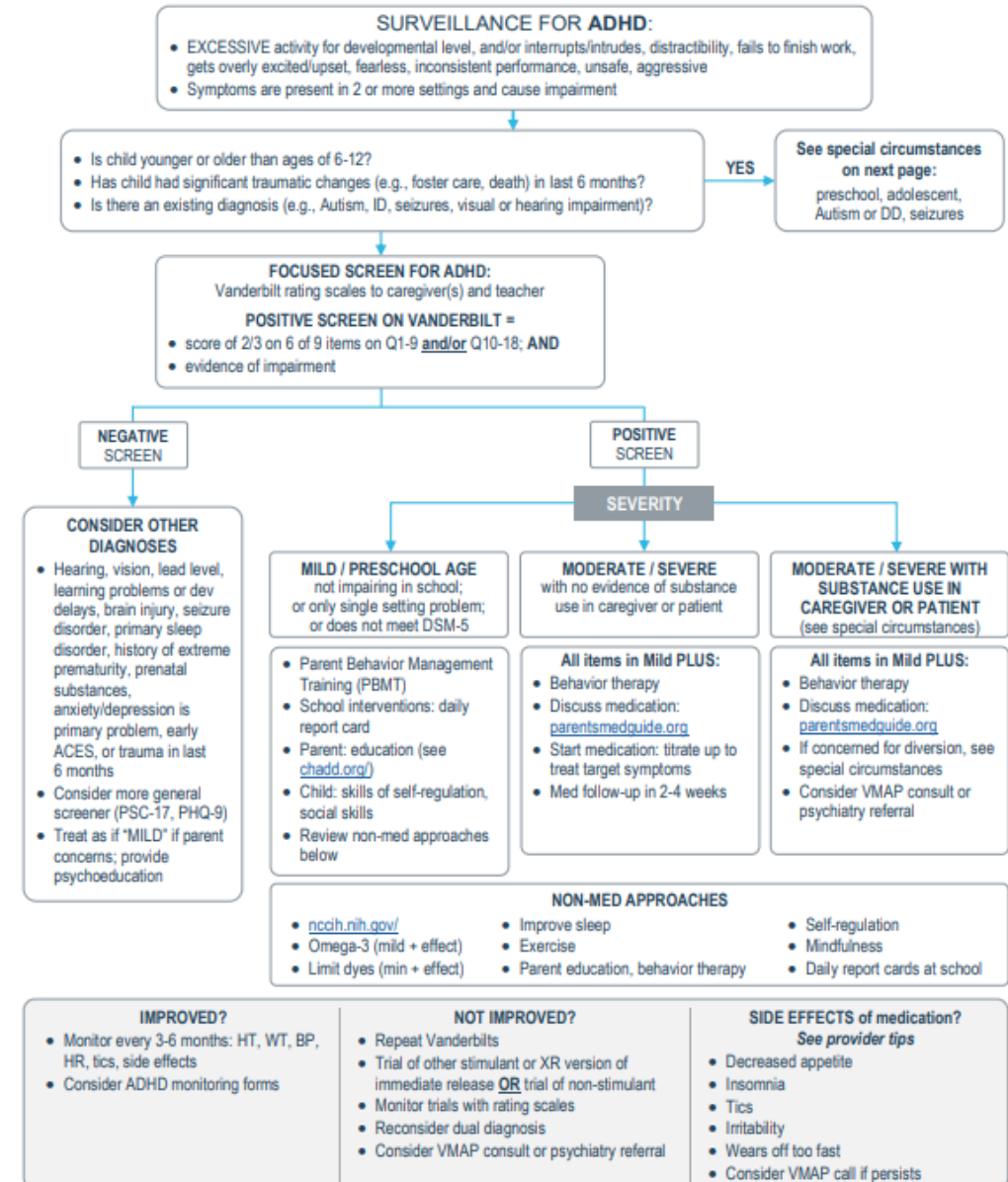
**ABSTRACT:** Attention-deficit/hyperactivity disorder (ADHD) is the most common childhood neurodevelopmental disorder and is associated with an array of coexisting conditions that complicate diagnostic assessment and treatment. ADHD and its coexisting conditions may impact function across multiple settings (home, school, peers, community), placing the affected child or adolescent at risk for adverse health and psychosocial outcomes in adulthood. Current practice guidelines focus on the treatment of ADHD in the primary care setting. The Society for Developmental and Behavioral Pediatrics has developed this practice guideline to facilitate integrated, interprofessional assessment and treatment of children and adolescents with “complex ADHD” defined by age (<4 years or presentation at age >12 years), presence of coexisting conditions, moderate to severe functional impairment, diagnostic uncertainty, or inadequate response to treatment.

(*J Dev Behav Pediatr* 41:S35–S57, 2020) **Index terms:** attention-deficit/hyperactivity disorder, ADHD, clinical practice guideline, children, adolescents.

[Clinical Practice Guideline For The Assessment And Treatment Of Children And Adolescents With Complex Attention-Deficit/Hyperactivity Disorder - SDBP](#)

# Virginia Mental Health Access Program (VMAP) Algorithm

<https://vmap.org/guidebook/>



# PHN BHI Website



About Us ▾ News Our Members ▾ Events ▾

Join Search 🔍

## Behavioral Health Initiative

The Behavioral Health Initiative is a collaborative partnership between Children's National Hospital and the Pediatric Health Network that aims to develop a comprehensive strategy to address mental and behavioral health needs in our regional primary care practice network, recognizing there is not a one-size-fits-all solution. We focus our efforts on two key areas that we believe will make a major impact on the mental and behavioral health of children and families in the Pediatric Health Network. These focus areas are 1) Training, Education, and Partnerships, and 2) Integrated Business Models and Care Management.

Launching in 2024 – Behavioral Health Initiative Quality Improvement Project

Apply Now

Build your practice's integrated behavioral health infrastructure with consultation from the PHN BHI Team! In 2024, the BHI is launching a yearlong Quality Improvement Project, offering a cohort of PHN practices participating in our Value-Based Care contracts the opportunity to build their behavioral health infrastructure with guidance from the BHI team. **Limited space is available for the pilot program. Apply by January 12, 2024, to be considered.**

<https://pediatrichealthnetwork.org/behavioral-health-initiative/>



### Behavioral Health Resources: Start Here

These toolkits for pediatricians provide comprehensive and efficient collections of guidelines and materials for supporting child mental health in primary care practice.



#### State and Local Resources

Pediatric mental health resources in Washington, D.C., Maryland, and Virginia.



#### Professional Development and Practice Toolkits

Online collections of mental health resources for mental health providers.



#### Anxiety

Resources for supporting youth with anxiety problems including Generalized Anxiety Disorder, Social Anxiety Disorder, and Separation Anxiety Disorder.



#### Autism and Intellectual Disability

Resources for supporting youth with autism and/or intellectual disability.



#### Depression

Tools, including screening instruments and treatment guides, for pediatric depression.



#### Early Childhood Mental Health

Early childhood mental health resources for children ages birth to five.



#### Feeding and Eating Disorders

Resources for youth with feeding and eating problems, including sensory food aversions, ARFID, anorexia, and bulimia.



#### Inattention, Hyperactivity, and Executive Functioning Problems

Rating scales, treatment tools, and other resources for supporting youth with executive functioning problems including ADHD.



#### LGBTQ+ Support

Resources for supporting LGBTQ+ youth.



#### Mood Dysregulation, Disruptive Behavior, and Aggression

Online resources for pediatricians supporting youth with severe externalizing behaviors.



#### Perinatal Mental Health

Provider-facing resources on perinatal mental health issues.



#### Psychosis

Provider-facing resources on managing prodromal and early psychosis in youth.

# Complex ADHD: Introduction



# Complex ADHD: Definition

- Age under 4, or 12+ at age of initial presentation
- Presence of coexisting conditions (neurodevelopmental, mental health, medical, or psychosocial factors adversely affecting health and development)
- Moderate to severe functional impairment
- Diagnostic uncertainty
- Inadequate response to treatment

Guidelines

---

**Society for Developmental and Behavioral Pediatrics Clinical Practice Guideline for the Assessment and Treatment of Children and Adolescents with Complex Attention-Deficit/Hyperactivity Disorder**

William J. Barbaresi, MD (Guideline Panel Chair),\* Lisa Campbell, MD,† Elizabeth A. Dickroger, MD,‡ Tanya E. Froehlich, MD,§ Yi Hui Liu, MD, MPH,|| Eva O'Malley,¶ William E. Pelham Jr, PhD, ABPP,\*\* Thomas J. Power, PhD, ABPP,†† Samuel H. Zinner, MD,‡‡ Eugenia Chan, MD, MPH\*

**ABSTRACT:** Attention-deficit/hyperactivity disorder (ADHD) is the most common childhood neurodevelopmental disorder and is associated with an array of coexisting conditions that complicate diagnostic assessment and treatment. ADHD and its coexisting conditions may impact function across multiple settings (home, school, peers, community), placing the affected child or adolescent at risk for adverse health and psychosocial outcomes in adulthood. Current practice guidelines focus on the treatment of ADHD in the primary care setting. The Society for Developmental and Behavioral Pediatrics has developed this practice guideline to facilitate integrated, interprofessional assessment and treatment of children and adolescents with “complex ADHD” defined by age (<4 years or presentation at age >12 years), presence of coexisting conditions, moderate to severe functional impairment, diagnostic uncertainty, or inadequate response to treatment.

(J Dev Behav Pediatr 41:S35–S57, 2020) **Index terms:** attention-deficit/hyperactivity disorder, ADHD, clinical practice guideline, children, adolescents.

[Clinical Practice Guideline For The Assessment And Treatment Of Children And Adolescents With Complex Attention-Deficit/Hyperactivity Disorder - SDBP](#)

# Complex ADHD: General Principles

- Childhood functioning (parent-child interactions, school functioning, peer relationships) predicts adult functioning (relationships, educational attainment, vocational/financial security, independence, substance use).
- So, treatment goal for children should be **improving overall functioning**, not just reducing ADHD symptoms.



# Complex ADHD: General Principles

- Complex ADHD often requires **multidisciplinary care** using a **shared decision-making** model
- In general, the more impairing condition (ADHD or comorbid condition) should be treated first
- Children with complex ADHD who respond well to PCP treatment do not necessarily need specialist referral
- Using psychosocial treatment + medication may require a lower “dose” of each than if just one approach is used



# Complex ADHD: Psychosocial Treatment

- **Psychosocial treatment** (in addition to medication) is generally necessary for treating complex ADHD. Medications have a stronger immediate effect on reducing ADHD symptoms, but therapy:
  - addresses symptoms as well as functioning,
  - has higher parent satisfaction ratings than medications alone, and
  - continues to benefit children after the intervention is stopped
- Specifically, the **goals of psychosocial treatment** should include:
  - incorporating developmentally appropriate strategies for self-management,
  - skill building, and
  - prevention of adverse outcomes (e.g., substance use, conduct problems, depression/anxiety, suicidal ideation, educational failure)

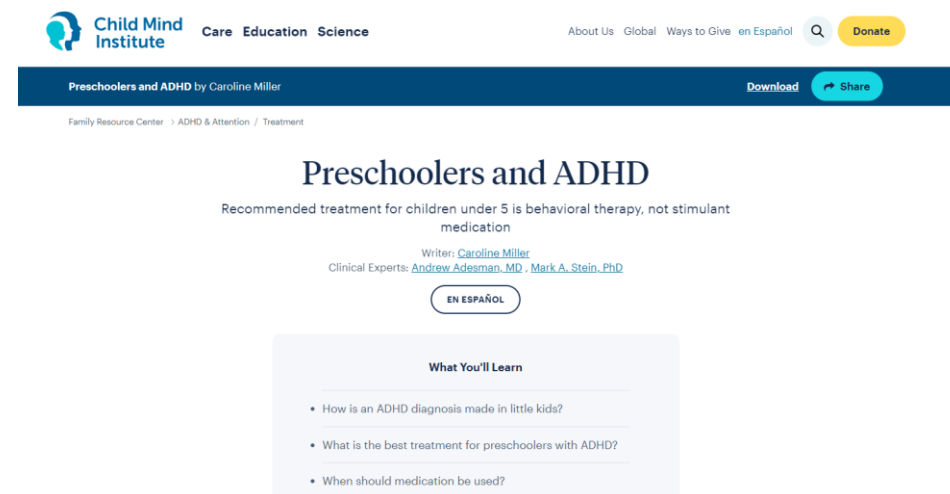
# Complex ADHD: Ongoing Monitoring

- SDBP guidelines for ongoing monitoring of complex ADHD generally follow AAP ADHD Toolkit guidelines:
  - Monitoring ADHD symptoms and functioning with scales 2-4x/year or when indicated
  - Monitoring co-existing condition symptoms/functioning
  - Weight, height, HR, BP, medication side effects
  - Strengths and psychosocial stressors (bullying, family mental health, other social determinants of health)
  - Anticipatory guidance on upcoming developmental stages

# Complex ADHD: Considerations by Age

# Preschool (to age 4)

- Insufficient evidence to recommend diagnosis or treatment (other than parent training in behavioral management training) of ADHD in children under 4
- Consider referral for parent training in behavioral management



## Preschool (age 4-6)

- Normative data are available for age 5-18 for ADHD Rating Scale-5, but reasonable to use Vanderbilt or other DSM-5 based scale
- Parent training in behavioral management has efficacy for many problem behaviors and does not require ADHD diagnosis; consider referral before diagnosing ADHD
- Refer for behavioral classroom interventions if child is in preschool

## Preschool (age 4-6)

- Consider methylphenidate (off label) after failure of behavioral interventions, if moderate to severe continued impairment; more evidence for methylphenidate than for amphetamines (on label).
- Consider calling MAP for consultation.
- Use lower doses of methylphenidate and titrate more slowly
- Increased risk of dysphoria and behavioral dysregulation with stimulants
- Consider formulation (liquid, pill, etc.)

## ADHD Medication Guide\*\*

Revised December 2023

### Methylphenidate Formulations – Long Acting, Oral\*\*\*

Capacitors and tablets in this section are shown at actual size

<b>Concerta®</b> ADHD	18 mg, 27 mg, 36 mg, 54 mg, 72 mg, 90 mg, 108 mg, 126 mg, 144 mg, 162 mg, 180 mg, 207 mg, 225 mg, 243 mg, 270 mg, 288 mg, 306 mg, 324 mg, 342 mg, 360 mg, 378 mg, 396 mg, 414 mg, 432 mg, 450 mg, 468 mg, 486 mg, 504 mg, 522 mg, 540 mg, 558 mg, 576 mg, 594 mg, 612 mg, 630 mg, 648 mg, 666 mg, 684 mg, 702 mg, 720 mg, 738 mg, 756 mg, 774 mg, 792 mg, 810 mg, 828 mg, 846 mg, 864 mg, 882 mg, 900 mg, 918 mg, 936 mg, 954 mg, 972 mg, 990 mg, 1008 mg, 1026 mg, 1044 mg, 1062 mg, 1080 mg, 1098 mg, 1116 mg, 1134 mg, 1152 mg, 1170 mg, 1188 mg, 1206 mg, 1224 mg, 1242 mg, 1260 mg, 1278 mg, 1296 mg, 1314 mg, 1332 mg, 1350 mg, 1368 mg, 1386 mg, 1404 mg, 1422 mg, 1440 mg, 1458 mg, 1476 mg, 1494 mg, 1512 mg, 1530 mg, 1548 mg, 1566 mg, 1584 mg, 1602 mg, 1620 mg, 1638 mg, 1656 mg, 1674 mg, 1692 mg, 1710 mg, 1728 mg, 1746 mg, 1764 mg, 1782 mg, 1800 mg, 1818 mg, 1836 mg, 1854 mg, 1872 mg, 1890 mg, 1908 mg, 1926 mg, 1944 mg, 1962 mg, 1980 mg, 1998 mg, 2016 mg, 2034 mg, 2052 mg, 2070 mg, 2088 mg, 2106 mg, 2124 mg, 2142 mg, 2160 mg, 2178 mg, 2196 mg, 2214 mg, 2232 mg, 2250 mg, 2268 mg, 2286 mg, 2304 mg, 2322 mg, 2340 mg, 2358 mg, 2376 mg, 2394 mg, 2412 mg, 2430 mg, 2448 mg, 2466 mg, 2484 mg, 2502 mg, 2520 mg, 2538 mg, 2556 mg, 2574 mg, 2592 mg, 2610 mg, 2628 mg, 2646 mg, 2664 mg, 2682 mg, 2700 mg, 2718 mg, 2736 mg, 2754 mg, 2772 mg, 2790 mg, 2808 mg, 2826 mg, 2844 mg, 2862 mg, 2880 mg, 2898 mg, 2916 mg, 2934 mg, 2952 mg, 2970 mg, 2988 mg, 3006 mg, 3024 mg, 3042 mg, 3060 mg, 3078 mg, 3096 mg, 3114 mg, 3132 mg, 3150 mg, 3168 mg, 3186 mg, 3204 mg, 3222 mg, 3240 mg, 3258 mg, 3276 mg, 3294 mg, 3312 mg, 3330 mg, 3348 mg, 3366 mg, 3384 mg, 3402 mg, 3420 mg, 3438 mg, 3456 mg, 3474 mg, 3492 mg, 3510 mg, 3528 mg, 3546 mg, 3564 mg, 3582 mg, 3600 mg, 3618 mg, 3636 mg, 3654 mg, 3672 mg, 3690 mg, 3708 mg, 3726 mg, 3744 mg, 3762 mg, 3780 mg, 3798 mg, 3816 mg, 3834 mg, 3852 mg, 3870 mg, 3888 mg, 3906 mg, 3924 mg, 3942 mg, 3960 mg, 3978 mg, 3996 mg, 4014 mg, 4032 mg, 4050 mg, 4068 mg, 4086 mg, 4104 mg, 4122 mg, 4140 mg, 4158 mg, 4176 mg, 4194 mg, 4212 mg, 4230 mg, 4248 mg, 4266 mg, 4284 mg, 4302 mg, 4320 mg, 4338 mg, 4356 mg, 4374 mg, 4392 mg, 4410 mg, 4428 mg, 4446 mg, 4464 mg, 4482 mg, 4500 mg, 4518 mg, 4536 mg, 4554 mg, 4572 mg, 4590 mg, 4608 mg, 4626 mg, 4644 mg, 4662 mg, 4680 mg, 4698 mg, 4716 mg, 4734 mg, 4752 mg, 4770 mg, 4788 mg, 4806 mg, 4824 mg, 4842 mg, 4860 mg, 4878 mg, 4896 mg, 4914 mg, 4932 mg, 4950 mg, 4968 mg, 4986 mg, 5004 mg, 5022 mg, 5040 mg, 5058 mg, 5076 mg, 5094 mg, 5112 mg, 5130 mg, 5148 mg, 5166 mg, 5184 mg, 5202 mg, 5220 mg, 5238 mg, 5256 mg, 5274 mg, 5292 mg, 5310 mg, 5328 mg, 5346 mg, 5364 mg, 5382 mg, 5400 mg, 5418 mg, 5436 mg, 5454 mg, 5472 mg, 5490 mg, 5508 mg, 5526 mg, 5544 mg, 5562 mg, 5580 mg, 5598 mg, 5616 mg, 5634 mg, 5652 mg, 5670 mg, 5688 mg, 5706 mg, 5724 mg, 5742 mg, 5760 mg, 5778 mg, 5796 mg, 5814 mg, 5832 mg, 5850 mg, 5868 mg, 5886 mg, 5904 mg, 5922 mg, 5940 mg, 5958 mg, 5976 mg, 5994 mg, 6012 mg, 6030 mg, 6048 mg, 6066 mg, 6084 mg, 6102 mg, 6120 mg, 6138 mg, 6156 mg, 6174 mg, 6192 mg, 6210 mg, 6228 mg, 6246 mg, 6264 mg, 6282 mg, 6300 mg, 6318 mg, 6336 mg, 6354 mg, 6372 mg, 6390 mg, 6408 mg, 6426 mg, 6444 mg, 6462 mg, 6480 mg, 6498 mg, 6516 mg, 6534 mg, 6552 mg, 6570 mg, 6588 mg, 6606 mg, 6624 mg, 6642 mg, 6660 mg, 6678 mg, 6696 mg, 6714 mg, 6732 mg, 6750 mg, 6768 mg, 6786 mg, 6804 mg, 6822 mg, 6840 mg, 6858 mg, 6876 mg, 6894 mg, 6912 mg, 6930 mg, 6948 mg, 6966 mg, 6984 mg, 7002 mg, 7020 mg, 7038 mg, 7056 mg, 7074 mg, 7092 mg, 7110 mg, 7128 mg, 7146 mg, 7164 mg, 7182 mg, 7200 mg, 7218 mg, 7236 mg, 7254 mg, 7272 mg, 7290 mg, 7308 mg, 7326 mg, 7344 mg, 7362 mg, 7380 mg, 7398 mg, 7416 mg, 7434 mg, 7452 mg, 7470 mg, 7488 mg, 7506 mg, 7524 mg, 7542 mg, 7560 mg, 7578 mg, 7596 mg, 7614 mg, 7632 mg, 7650 mg, 7668 mg, 7686 mg, 7704 mg, 7722 mg, 7740 mg, 7758 mg, 7776 mg, 7794 mg, 7812 mg, 7830 mg, 7848 mg, 7866 mg, 7884 mg, 7902 mg, 7920 mg, 7938 mg, 7956 mg, 7974 mg, 7992 mg, 8010 mg, 8028 mg, 8046 mg, 8064 mg, 8082 mg, 8100 mg, 8118 mg, 8136 mg, 8154 mg, 8172 mg, 8190 mg, 8208 mg, 8226 mg, 8244 mg, 8262 mg, 8280 mg, 8298 mg, 8316 mg, 8334 mg, 8352 mg, 8370 mg, 8388 mg, 8406 mg, 8424 mg, 8442 mg, 8460 mg, 8478 mg, 8496 mg, 8514 mg, 8532 mg, 8550 mg, 8568 mg, 8586 mg, 8604 mg, 8622 mg, 8640 mg, 8658 mg, 8676 mg, 8694 mg, 8712 mg, 8730 mg, 8748 mg, 8766 mg, 8784 mg, 8802 mg, 8820 mg, 8838 mg, 8856 mg, 8874 mg, 8892 mg, 8910 mg, 8928 mg, 8946 mg, 8964 mg, 8982 mg, 9000 mg, 9018 mg, 9036 mg, 9054 mg, 9072 mg, 9090 mg, 9108 mg, 9126 mg, 9144 mg, 9162 mg, 9180 mg, 9198 mg, 9216 mg, 9234 mg, 9252 mg, 9270 mg, 9288 mg, 9306 mg, 9324 mg, 9342 mg, 9360 mg, 9378 mg, 9396 mg, 9414 mg, 9432 mg, 9450 mg, 9468 mg, 9486 mg, 9504 mg, 9522 mg, 9540 mg, 9558 mg, 9576 mg, 9594 mg, 9612 mg, 9630 mg, 9648 mg, 9666 mg, 9684 mg, 9702 mg, 9720 mg, 9738 mg, 9756 mg, 9774 mg, 9792 mg, 9810 mg, 9828 mg, 9846 mg, 9864 mg, 9882 mg, 9900 mg, 9918 mg, 9936 mg, 9954 mg, 9972 mg, 9990 mg, 10008 mg, 10026 mg, 10044 mg,
--------------------------	---

# Initial Presentation in Adolescence (age 12-18)

- Per DSM-5, must have evidence of inattention or hyperactivity/impulsivity before age 12
- Extra consideration of differential (anxiety, depression, substance use, learning disorders) if later presentation
- Consider referral for neuropsychology testing for older/more complex cases
- Aim is to get ratings from at least 2 teachers/coaches plus parents
- Counsel on risk-taking behaviors and improved outcomes with treatment
  - Motor vehicle crashes and other injuries (consider afternoon booster dose if driving later in day)
  - Depression
  - Aggression and criminal behavior

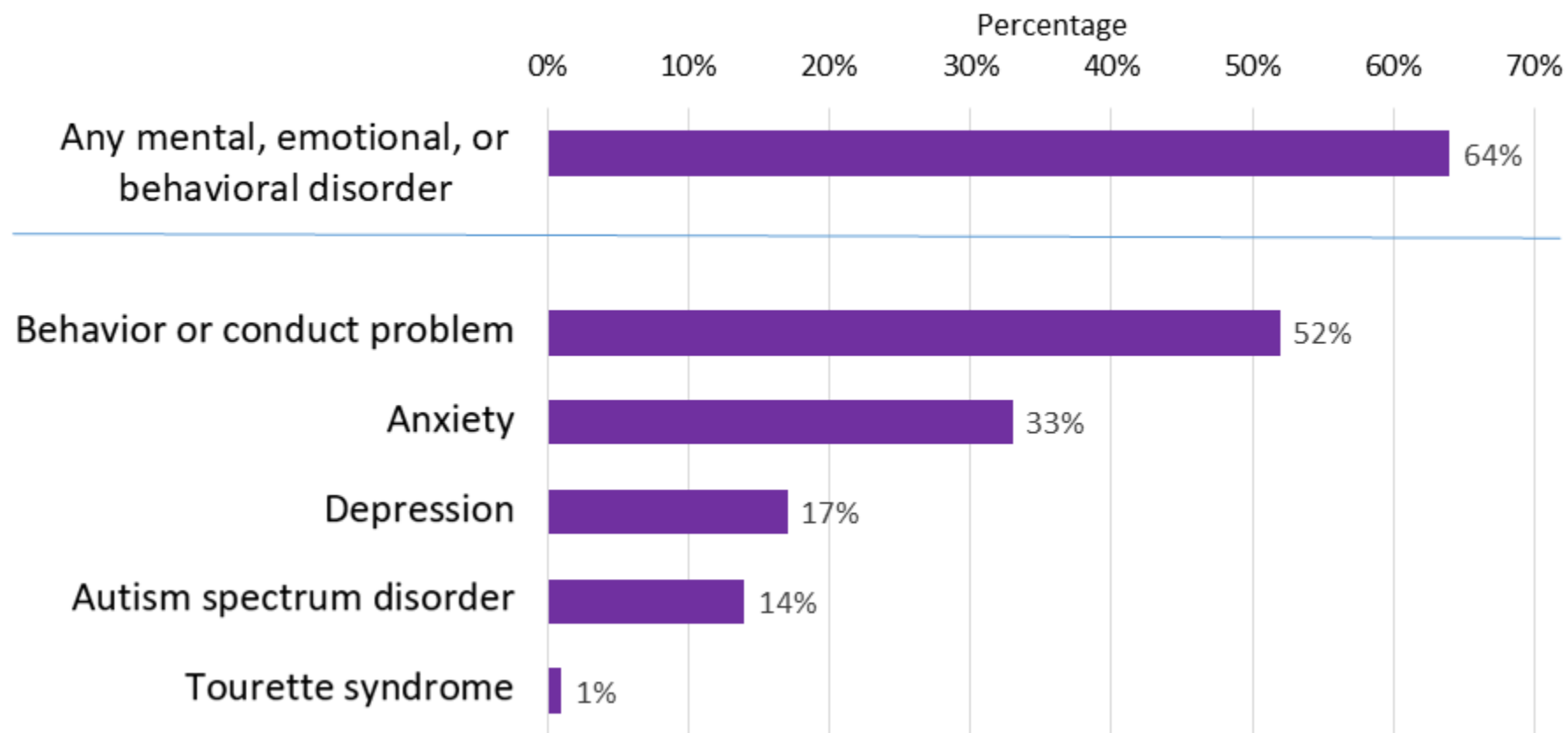
# Transition to Adulthood

- Start discussion of transition to adult services around age 14
- Goal is to reduce treatment attrition and maintain adherence through transfer of care from parent/pediatrician to patient/adult provider
- Suggested resources:
  - CHADD Young Adults Resource Kit: [ADHD-Toolkit-2-Your-Emerging-Adults-Resource-Links.pdf \(d393uh8gb46l22.cloudfront.net\)](https://d393uh8gb46l22.cloudfront.net/ADHD-Toolkit-2-Your-Emerging-Adults-Resource-Links.pdf)
  - NAMI College Guide: [Home \(nami.org\)](https://www.nami.org)
  - Understood.org



# Complex ADHD: Co-Occurring Conditions

# Percent of Children with ADHD Who Had at Least One Other Disorder



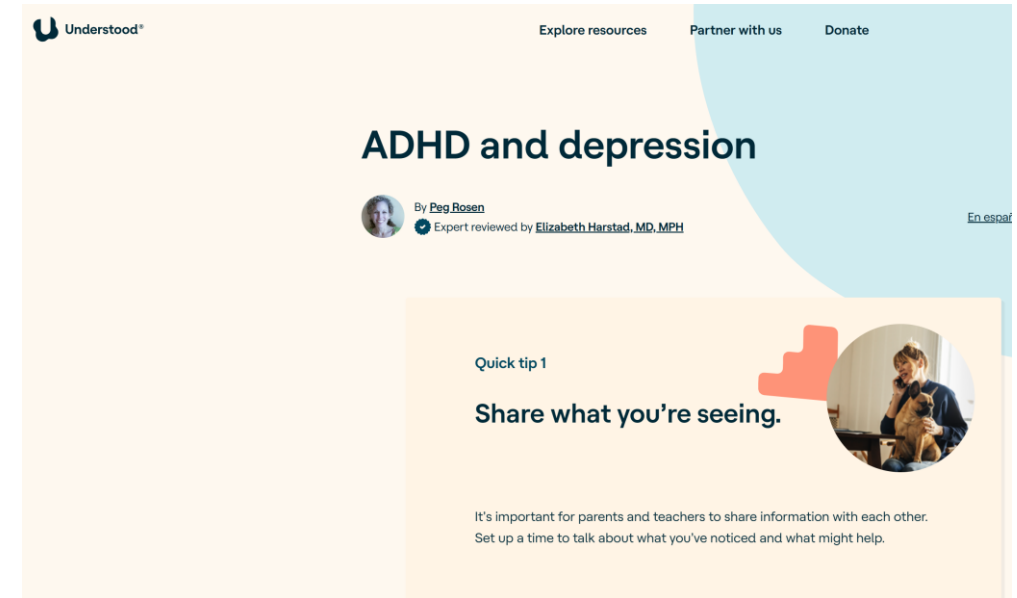
# Coexisting Anxiety

- Stimulants can (but do not necessarily) worsen anxiety – if so, consider atomoxetine
- Treating ADHD can improve anxiety that is caused by ADHD symptoms (e.g. by improving academic performance)
- Generally, treat the more impairing symptoms (anxiety or ADHD) first

The screenshot shows the HealthyChildren.org website. At the top, there's a navigation bar with 'OUR SPONSORS', 'LOG IN | REGISTER', a language toggle for 'en ESPAÑOL', and the American Academy of Pediatrics logo. Below this is a search bar and a navigation menu with categories like 'Ages & Stages', 'Healthy Living', 'Safety & Prevention', 'Family Life', 'Health Issues' (which is highlighted), 'News', 'Tips & Tools', and 'Our Mission'. There's also a 'shopAAP' link. The main content area shows the breadcrumb trail: 'Healthy Children > Health Issues > Conditions > Emotional Problems > Anxiety Disorders and ADHD'. The title 'Anxiety Disorders and ADHD' is prominently displayed. Below the title, there's a paragraph explaining the overlap between anxiety disorders and ADHD. To the left of the main content, there's a 'Conditions' sidebar with a list of topics including Abdominal, ADHD, Allergies & Asthma, Autism, Cancer, Chest & Lungs, and Chronic Conditions. Social sharing buttons for Facebook, Pinterest, Email, and Print are also visible.

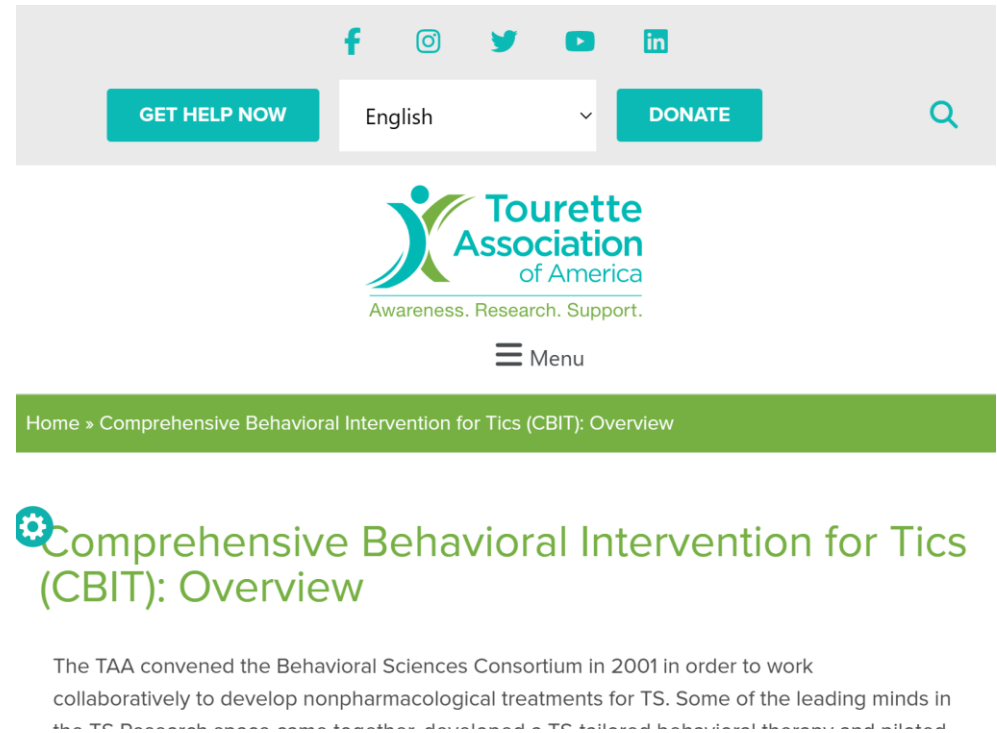
# Coexisting Mood Disorders

- **Depression**
  - Generally, treat the more impairing symptoms (depression or ADHD) first
  - Atomoxetine does not help much with depression
- **Bipolar Disorder**
  - Stimulants can cause treatment emergent hypomania/mania
  - Use caution if positive family history of bipolar disorder, and consider psychiatry referral if concern for comorbid bipolar diagnosis



# Coexisting Tic Disorder

- Up to 20% of children with ADHD have comorbid tic disorder (including mild tics)
- If tics are not too impairing and distressing, can manage ADHD routinely
- If tics are severe, consider alpha agonists (which can help both tics and ADHD)
- If stimulants exacerbate tics, consider adding or changing to nonstimulant options (alpha agonist, CBIT)
- Consider referral for Comprehensive Behavioral Intervention for Tics (CBIT) therapy



The screenshot shows the top navigation bar of the Tourette Association of America website. It includes social media icons for Facebook, Instagram, Twitter, YouTube, and LinkedIn. Below these are buttons for "GET HELP NOW", a language dropdown menu set to "English", and a "DONATE" button. The main header features the Tourette Association of America logo with the tagline "Awareness. Research. Support." and a "Menu" button. A green breadcrumb trail reads "Home » Comprehensive Behavioral Intervention for Tics (CBIT): Overview". The main heading is "Comprehensive Behavioral Intervention for Tics (CBIT): Overview" with a gear icon. Below this, a paragraph states: "The TAA convened the Behavioral Sciences Consortium in 2001 in order to work collaboratively to develop nonpharmacological treatments for TS. Some of the leading minds in the TS Research space came together, developed a TS-tailored behavioral therapy and piloted..."

# Coexisting Substance Use Disorder

- Youth with ADHD are at increased risk for developing substance use disorder, at an earlier age, with increased risk of persistence into adulthood
- However, there is no evidence that prescribed stimulant use for ADHD increases the risk of developing substance use disorder
- Provide brief intervention and referral to specialist for substance use disorder

# Coexisting Substance Use Disorder

- Consider prescribing nonstimulant medication, or stimulant medication that is a prodrug, is transdermal, or has osmotic release oral system
- Monitor for diversion (increased risk if coexisting conduct disorder, poor academic performance)
- Consider having school nurse administer medications to reduce risk of diversion
- Amphetamines (but not methylphenidate) are tested in routine urine drug screen panel; can be helpful for monitoring adherence/diversion
- Prescribe immediate release stimulants only with caution to college students, and provide anticipatory guidance



# Autism, ID, and Other Neurodevelopmental Disabilities

- Diagnostically can be difficult to determine whether observed behaviors are due to ADHD or co-existing developmental disability
- No medication reduces the intensity of the core traits of autism
- ADHD medications have evidence for reducing ADHD symptoms in autistic children with comorbid ADHD, but efficacy rates are lower and side effects are more common
- Methylphenidate has more published evidence for decreasing ADHD symptoms than amphetamines in autistic youth



ADHD in Youth with ASD:

**Parents'  
Medication Guide**

AMERICAN ACADEMY OF  
CHILD & ADOLESCENT  
PSYCHIATRY  
WWW.AACAP.ORG

AMERICAN  
PSYCHIATRIC  
ASSOCIATION





# Other Coexisting Psychiatric Disorders

- **Trauma disorders:** There are no on-label medications for pediatric PTSD; can consider treating comorbid ADHD with an alpha agonist
- **Eating disorders:** Consider a nonstimulant medication. Malnourishment can cause poor attention
- **Psychosis:** Stimulants can rarely cause emergence of psychosis. ER and psychiatry referral is indicated

# Coexisting Learning Disorder

- Treatment requires the interpretation of psychological test results, development of multimodal treatment plans, and review of school services, progress reports, and Individualized Education Program (IEP)/504 plans
- Consider referral for psychoeducational testing if it has not been completed already or the child is still struggling
- Academic interventions for learning disorders have strong empiric support. Medications have not been shown to treat learning disorders
- Stimulants have the most evidence for reducing ADHD symptoms in children with coexisting learning disorder

# Complex ADHD: Diagnostic Uncertainty



# Diagnostic Uncertainty

**If ADHD symptoms are only reported in one setting, consider if symptoms are caused by something particular to that setting...**

- *Symptoms at school only:* learning disorder, bullying, sensory demands, social demands
- *Symptoms at home only:* need for increased structure, developmentally inappropriate behavioral expectations, family stress

# Diagnostic Uncertainty

**If symptoms are present in both settings, but are only problematic in one setting, consider possible explanations...**

- *Vanderbilt positive at home only:* structure of school reduces intensity of behavior, child is anxious and inhibited at school, teacher does not know child well, predominantly inattentive symptoms overlooked in busy classroom
- *Vanderbilt is positive at school only:* separation anxiety disorder, parents accommodate child's behaviors at home, high teacher stress or developmentally inappropriate expectations

# Diagnostic Uncertainty

**If ADHD symptoms appear to have abrupt onset, consider...**

- Major life events (move, family structure changes)
- New academic demands (e.g. "learn to read" to "read to learn" transition in 3rd grade, transition to middle school)
- Trauma
- Onset of anxiety, sleep, or depressive disorder

# Steps to Clarify Diagnosis

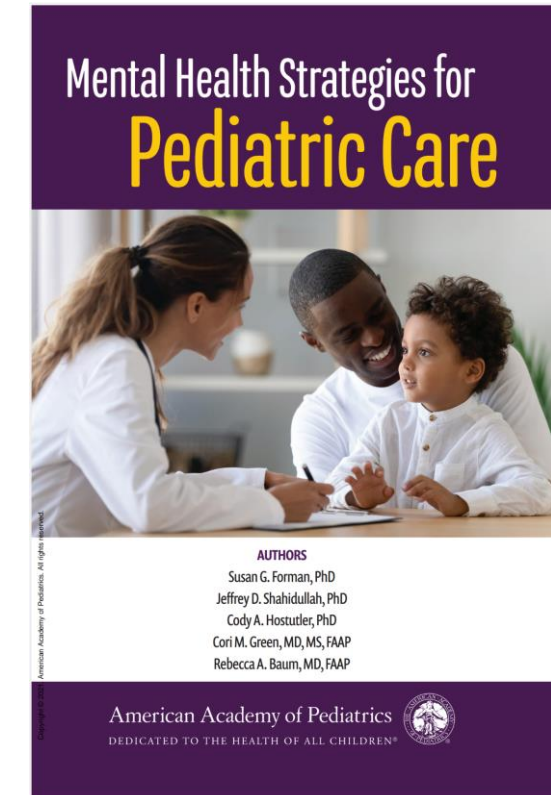
- Gather further history, scales, collateral information
- Treat the disorder that is clearly present first, and then reassess if the symptoms of the comorbid disorder are still present
- Safety assessment and planning as indicated
- Consider referral for comprehensive assessment

# Complex ADHD: Troubleshooting Inadequate Response to Treatment



# Verify that patient has been referred for an evidence-based psychosocial interventions for ADHD

- Parent training in behavior management
  - *Parent-Child Interaction Therapy (age 2-7)*
  - *Parent Management Training (age 3-13)*
  - *Triple P – Positive Parenting Program*
  - *The Incredible Years (age 0-3)*
- Organization training to teach time management, planning, organization, and cooperation skills
- Behavioral peer interventions (group-based) to address social problems
- Behavioral classroom management (e.g., posted rules with positive reinforcement and consequences)



[Mental Health Strategies for Pediatric Care](#) | [AAP Books](#) | [American Academy of Pediatrics](#)

# Consider Referral for Comprehensive Assessment

- Co-existing conditions are common in ADHD but can be hard to diagnose without additional cognitive and developmental data
- Children with unidentified co-existing conditions are more likely to have moderate/severe functional impairment and/or treatment refractory symptoms
- Comprehensive assessment can provide clarity when there are situations that make obtaining reliable information more difficult (e.g. family stress, parental mental health problems, adoption, foster care)
- School-based assessments and private psychological evaluations can look at different concerns and serve different purposes (e.g., school-based accommodations vs. diagnostic clarity and complex cases)

# Recommend Adding Additional IEP/504 Supports for ADHD

- Extended time
- Reduced distractions (e.g., preferential seating, testing in a quiet environment)
- Frequent breaks (e.g., movement breaks)
- “Chunking” of assignments into discrete steps (e.g., graphic organizers)
- Reduced homework
- Daily school-home communication about behavior and assignments (include positives)
- Points system for behavior
- Organization training including support for tracking assignments



**SCHOOL CHALLENGE**  
DAILY REPORT CARD

Date: \_\_\_\_\_

	Morning			Early Afternoon			Late Afternoon		
1)	YES	N/A	NO	YES	N/A	NO	YES	N/A	NO
2)	YES	N/A	NO	YES	N/A	NO	YES	N/A	NO
3)	YES	N/A	NO	YES	N/A	NO	YES	N/A	NO

**DAILY TOTAL:** Total Yes = \_\_\_\_\_

**REWARD MENU**

DAILY REWARD	WEEKLY REWARD

School Challenge Reward given today? ☐ YES ☐ NO

# Consider Whether to Switch ADHD Medication

- "The effect size for stimulants is 1.0 and for nonstimulants is 0.7"
  - In the absence of contraindications, stimulants are generally the first line medication for ADHD.
- "An individual's response to methylphenidate versus amphetamine is idiosyncratic, with approximately 40% responding to both and about 40% responding to only 1."
  - If a child does not respond to the first class of stimulant that was tried, it is reasonable to try the other class of stimulant.
- "Pharmacogenetics tools are not recommended."

CLINICAL PRACTICE GUIDELINE

American Academy  
of Pediatrics  
DEDICATED TO THE HEALTH OF ALL CHILDREN™



[Clinical Practice Guideline: Treatment of the School-Aged Child With Attention-Deficit/Hyperactivity Disorder | Pediatrics | American Academy of Pediatrics \(aap.org\)](#)

Pliszka, Steven R et al. "The Texas Children's Medication Algorithm Project: revision of the algorithm for pharmacotherapy of attention-deficit/hyperactivity disorder." *Journal of the American Academy of Child and Adolescent Psychiatry* vol. 45,6 (2006): 642-657.

Clinical Practice Guideline for the  
Diagnosis, Evaluation, and Treatment of  
Attention-Deficit/Hyperactivity  
Disorder in Children and Adolescents

Mark L. Wolraich, MD, FAAP;<sup>1</sup> Joseph F. Hagan, Jr, MD, FAAP;<sup>2</sup> Carla Allan, PhD;<sup>3</sup> Eugenia Chan, MD, MPH, FAAP;<sup>4</sup> Dale Davison, MSPed, PCC;<sup>5</sup> Marian Earls, MD, MTS, FAAP;<sup>6</sup> Steven W. Evans, PhD;<sup>1</sup> Susan K. Flinn, MA;<sup>7</sup> Tanya Froehlich, MD, MS, FAAP;<sup>8</sup> Jennifer Frost, MD, FAAP;<sup>9</sup> Joseph R. Holbrook, PhD, MPH;<sup>9</sup> Christoph Ulrich Lehmann, MD, FAAP;<sup>1</sup> Herschel Robert Lessin, MD, FAAP;<sup>9</sup> Kymika Okechukwu, MPA;<sup>9</sup> Karen L. Pierce, MD, DFAACAP;<sup>9</sup> Jonathan D. Winner, MD, FAAP;<sup>9</sup> William Zurhellen, MD, FAAP;<sup>9</sup> SUBCOMMITTEE ON CHILDREN AND ADOLESCENTS WITH ATTENTION-DEFICIT/HYPERACTIVE DISORDER

**Pediatric Health Network**



# Considerations When Changing Stimulants Due to Drug Shortages

- Class (methylphenidate vs. amphetamine)
- Duration of action
- Strength (consider mg/hour calculation to compare formulations)
- Preparation (liquid, etc.)
- Enantiomer and prodrug considerations
- Insurance coverage/generic formulations

ADHD Medication Guide*									
Methylphenidate Formulations – Long Acting, Oral**									
(Capsules and tablets in this section are shown at actual size)									
Concerta®†	6-12 Yrs: 18-54mg SD: 18mg 13-17 Yrs: 18-72mg SD: 18mg 18 Yrs-Adult: 18-72mg SD: 18mg or 36mg	18mg	27mg	36mg	54mg	Relenza® (discontinued)	Discontinue to corresponding Concerta dosing	45mg	72mg
Focalin® XR†	6-17 Yrs: 5-30mg SD: 5mg 18 Yrs-Adult: 5-40mg SD: 5mg (biphasic – 50/50)	5mg	10mg	15mg	20mg	25mg	30mg	35mg	40mg
Cotempla XR-ODT®‡	6-17 Yrs: 8.6-51.8mg SD: 17.3mg (grape flavor)	8.6mg	17.3mg	25.9mg	34.6mg	51.8mg	68.4mg	85.1mg	101.8mg
Apertis® XR†	6 Yrs-Adult: 10-40mg SD: 10mg (biphasic – 40/60)	10mg	15mg	20mg	30mg	40mg	50mg	60mg	70mg
Quilivant XR®	6 Yrs-Adult: 20-60mg SD: 20mg (banana flavor)	10mg	20mg	30mg	40mg	50mg	60mg	70mg	80mg
QuillChew ER®§	6 Yrs-Adult: 20-60mg SD: 20mg (cherry flavor)	10mg	20mg	30mg	40mg	50mg	60mg	70mg	80mg
Ritalin® LA†	6-12 Yrs: 10-60mg SD: 20mg (biphasic – 50/50)	10mg	20mg	30mg	40mg	50mg	60mg	70mg	80mg
Metadate® CD†	6-17 Yrs: 10-60mg SD: 20mg (biphasic – 30/70)	10mg	20mg	30mg	40mg	50mg	60mg	70mg	80mg
Metadate® ER†	6 Yrs-Adult: 20-60mg SD: 20mg	10mg	20mg	30mg	40mg	50mg	60mg	70mg	80mg
Methylphenidate Pro-Drug Formulations – Long Acting, Oral**									
(Medications in this section are shown at actual size)									
AZStarp®††	6-12 Yrs: 26.1/5.2 – 52.3/10.4 SD: 26.2/7.8 mg Adult: 39.2/7.8 – 52.3/10.4 SD: 39.2/7.8 mg	26.1mg SDX / 5.2mg d-MPH	39.2mg SDX / 7.8mg d-MPH	52.3mg SDX / 10.4mg d-MPH					
Methylphenidate Formulations – Long Acting/Delayed Onset, Oral**									
(Medications in this section are shown at actual size)									
Jornay PM®‡	6 Yrs-Adult: 20-100mg (dosed in the evening) SD: 20mg	20mg	40mg	60mg	80mg	100mg			
Methylphenidate Formulations – Short Acting, Oral**									
(Medications in this section are shown at actual size)									
Focalin®	6-17 Yrs: Daily: 5-20mg divided BID or TID SD: 2.5mg BID	2.5mg	5mg	10mg	15mg	20mg			
Ritalin®	6-12 Yrs: Daily: 10-60mg divided BID or TID SD: 5mg BID Adults: Daily: 10-60mg divided BID or TID	5mg	10mg	15mg	20mg				
Methylphen Chewable§	6-12 Yrs: Daily: 10-60mg divided BID or TID SD: 5mg BID Adults: Daily: 10-60mg divided BID or TID	2.5mg	5mg	10mg	15mg	20mg			
Methylphen Solution	6-12 Yrs: Daily: 10-60mg divided BID or TID SD: 5mg BID Adults: Daily: 10-60mg divided BID or TID	5mg/5mL	10mg/5mL	15mg/5mL	20mg/5mL				
*Discontinued ADHD Medications: The following FDA-approved proprietary formulations are no longer available (though, in some cases, branded or generic equivalents are still available): Adhansia XR; Adrelin XR (liquid); Cylert (pemoline); Desferline Spansules (5mg, 15mg); Desferline tablets; Desferstat tablets; Lisdex/ADDD solution; Metadate CD capsules; Metadate ER tablet (10mg); Methylphen Chewable tablets; Ritalin LA capsule (60mg); Ritalin SR tablets (20mg).									
††Important Information: The age-specific dosing information listed for each medication reflects the FDA-approved prescribing information. "SD" refers to the FDA-recommended starting dose, which sometimes varies by age. Practitioners should refer to the full prescribing information for each medication. Please note: medications have been arranged on the ADHD Medication Guide for ease of display and visual comparison; dosing comparability cannot be assumed.									
*Disclaimer: The ADHD Medication Guide was created by Dr. Andrew Adelman of Northwell Health, Inc. Northwell Health is not affiliated with the owner nor is an owner of any of the medications or brands referenced in this Guide. No endorsement or affiliation exists between Northwell Health and the owner of the medications or brands. The ADHD Medication Guide is a visual aid for professionals caring for individuals with ADHD. The Guide includes only medications indicated by the FDA for the treatment of ADHD. In clinical practice, this guide may be used to assist patients in identifying medications previously tried, and may allow clinicians to identify ADHD medication options for the future. Practitioners should refer to the FDA-approved product information to learn more about each medication. Although every effort has been made to depict the true size and color of each medication depicted, we cannot guarantee there are no minor distortions. This Guide should not be used as an exclusive basis for decision-making. The user understands and accepts that if Northwell Health were to accept the risk of harm to the user from use of this Guide, it would not be able to make the Guide available because the cost to cover the risk of harm to all users would be too great. Thus, use of this ADHD Medication Guide is strictly voluntary and at the user's sole risk.									
Copyright 2006, 2016, 2017-2018, 2020, 2021, 2022, 2024 by Northwell Health, Inc. New Hyde Park, New York. All rights reserved. Reproduction of the ADHD Medication Guide or the creation of derivative works is not permitted without the written permission of Northwell Health. The sale of this Guide is strictly forbidden. Send inquiries to Office of Legal Affairs, Northwell Health, 2000 Marcus Avenue, New Hyde Park, NY 11042. This Guide is accurate as of December 1, 2023.									

Cohen Children's Medical Center  
Northwell Health

# Case Example



# Age 0-5: PCIT for Tantrums

- Unremarkable pregnancy and full term NSVD, met early milestones on time, MCHATs at 18 and 24 months were negative
- Started mainstream preschool at age 3.5 and had difficulty with tantrums
- PCP referred the family to Parent Child Interaction Therapy (PCIT) at age 4, and child responded well to intervention
  - *Diagnosis of ADHD is not required for referral to PCIT*
  - *ADHD medications have limited evidence under age 4*

# Age 5-8: Separation Anxiety Disorder

- In the second semester of kindergarten, teachers contacted family frequently due to concerns about difficulty not talking at school and not attending to or completing work despite clearly understanding the material
- PCP gave family Vanderbilts and SCARED. Teacher Vanderbilts were positive for inattention, but parent Vanderbilts were negative. SCARED (parent) was positive for separation anxiety. PCP referred to therapy for anxiety and suggested further evaluation at school, but school declined
  - *Positive teacher and negative parent Vanderbilts might indicate higher demands in school versus home – e.g., due to learning disorder, separation anxiety, parent accommodation to child's needs*
  - *When ADHD + anxiety comorbidity is possible and child is functioning well, reasonable to treat the more impairing symptoms first and reassess*
- Ongoing therapy for anxiety was helpful and the school did not express concerns in first or second grades



# Ages 9-11: ADHD-Predominantly Inattentive Presentation

- By third grade the child's grades were falling. Pediatrician repeated Vanderbilts and SCARED. Teacher and parent Vanderbilts were both positive for inattention. SCARED was negative.
- Pediatrician diagnosed ADHD-Predominantly Inattentive Presentation and recommended school accommodations. Child was physically healthy and growing well without concerning family history. PCP started Metadate CD 10mg, then titrated at next visit up to 20mg. Child responded well, repeat Vanderbilts showed improvement. School gave a 504 plan.
- *Children with comorbid ADHD and anxiety disorders often can tolerate stimulants without an increase in anxiety*
- *Neurodevelopmental differences often show up at transition points where demands change/increase – e.g., the change from "learn to read" to "read to learn" academic demands around third grade*
- *ADHD-Inattentive can be more difficult to diagnose than ADHD with hyperactive symptoms*

# Ages 12-14: Medication changes

- At age 12, parents were unable to fill Metadate CD 30mg QAM due to stimulant shortages, and child needed after-school stimulant coverage, so PCP changed to Concerta 36mg QAM. Child had an increase in ADHD symptoms and PCP titrated Concerta to 54mg QAM with good effect
  - *Metadate CD 30mg is roughly comparable to Concerta 54mg daily (see chart)*
- At age 14, parents were concerned that child was more irritable and expressing anxiety, and they brought child to PCP. Child and parent SCARED scales were positive for GAD. PCP referred to therapy. While child was on the therapy wait list, family asked about medications for anxiety. Child did well on fluoxetine started at 10mg and titrated up to 20mg daily
  - *Youth with comorbid ADHD and anxiety can benefit from treatment for both*

# Medication Chart

ADHD Medication Guide*						
Methylphenidate Formulations – Long Acting, Oral** (Capsules and tablets in this section are shown at actual size)						
Concerta®†	6-12 Yrs: 18-54mg; SD: 18mg 13-17 Yrs: 18-72mg; SD: 18mg ≥18 Yrs: 18-72mg; SD: 18mg or 36mg	G 18mg	G 27mg	G 36mg	G 54mg	Relexxii® (bioequivalent to cc
Focalin® XR‡ (dexamethylphenidate)	6-17 Yrs: 5-30mg; SD: 5mg 18 Yrs-Adult: 5-40mg; SD: 5mg (biphasic – 50/50)	G 5mg		G 10mg	G 15mg	G 20mg
Cotempla XR-ODT®§ (grape flavor)	6-17 Yrs: 8.6-51.8mg; SD: 17.3mg	8.6mg		17.3mg	25.9mg	34.6mg
Aptensio® XR‡	6 Yrs-Adult: 10-60mg; SD: 10mg (biphasic – 40/60)	G 10mg	G 15mg	G 20mg	G 30mg	G 40mg
Quillivant XR® 25mg/5mL (5mg/mL) (banana flavor)	6 Yrs-Adult: 20-60mg; SD: 20mg	10mg 2mL	1 Bottle: 300mg 60mL	20mg 4mL	30mg 6mL	40mg 8mL
QuilliChew ER®§ (cherry flavor)	6 Yrs-Adult: 20-60mg; SD: 20mg (biphasic – 30/70)			20mg	30mg	40mg
Ritalin® LA‡	6-12 Yrs: 10-60mg; SD: 20mg (biphasic – 50/50)	G 10mg		G 20mg	G 30mg	G 40mg
Metadate® CD‡	6-17 Yrs: 10-60mg; SD: 20mg (biphasic – 30/70)	G♦ 10mg		G♦ 20mg	G♦ 30mg	G♦ 40mg
Metadate® ER†	6 Yrs-Adult: 20-60mg; SD: 20mg	G♦ 10mg		G♦ 20mg		

# Age 15-18: Preparing for adulthood

- ADHD and anxiety symptoms were well controlled with individual therapy, Concerta 54mg daily, and fluoxetine 20mg daily. However, child still struggled with organization and self-advocacy skills. Parents sought out additional executive functioning supports at school, and this was helpful
  - *Organization training is an evidence-based intervention for ADHD*
- PCP started discussing transition to adulthood around age 14. When the child committed to a college, PCP advised family on transition of care plans
  - *Find local prescribers as soon as possible*
  - *Contact the college disability office about possible accommodations, and*
  - *Read about FERPA release of information processes with their parents*

**Thank You!**

**Question & Answer**

# Claiming CME Credit

1. All providers must create an account on the new platform, visit: [cme.inova.org](https://cme.inova.org).
2. Once you have an account, credit for this session can be claimed in one of two ways:
  1. Text today's session code ("NERTAS") to 703-260-9391.
  2. Visit [cme.inova.org/code](https://cme.inova.org/code) to enter today's session code ("NERTAS") on the website.

CME credit must be claimed within **30 days** of the presentation date.