

Children's National-Pediatric Health Network

Managing Pediatric ADHD in the Outpatient Setting 2.0

Kelly Register-Brown, MD and Elana Neshkes, MD

April 10, 2024

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
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 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

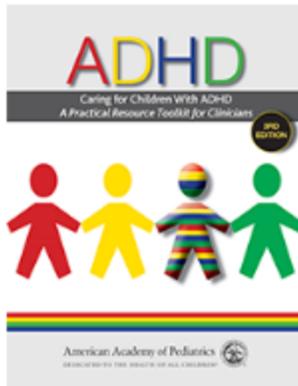
Key Resources

Pediatric Health Network



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>

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Key Resources

CLINICAL PRACTICE GUIDELINE

American Academy
of Pediatrics



DEDICATED TO THE HEALTH OF ALL CHILDREN™

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

Mark L. Wolraich, MD, FAAP,^a Joseph F. Hagan, Jr, MD, FAAP,^{b,c} Carla Allan, PhD,^{d,e} Eugenia Chan, MD, MPH, FAAP,^{f,g}
Dale Davison, MSPed, PCC,^{h,i} Marian Earls, MD, MTS, FAAP,^{j,k} Steven W. Evans, PhD,^{l,m} Susan K. Flinn, MA,ⁿ
Tanya Froehlich, MD, MS, FAAP,^{o,p} Jennifer Frost, MD, FAAP,^{q,r} Joseph R. Holbrook, PhD, MPH,^s
Christoph Ulrich Lehmann, MD, FAAP,^t Herschel Robert Lessin, MD, FAAP,^u Kymika Okechukwu, MPA,^v
Karen L. Pierce, MD, DFAACAP,^{w,x} Jonathan D. Winner, MD, FAAP,^y William Zurhellen, MD, FAAP,^z 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 \(aap.org\)](#)

Pediatric **Health** Network



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. Diekroger, 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*

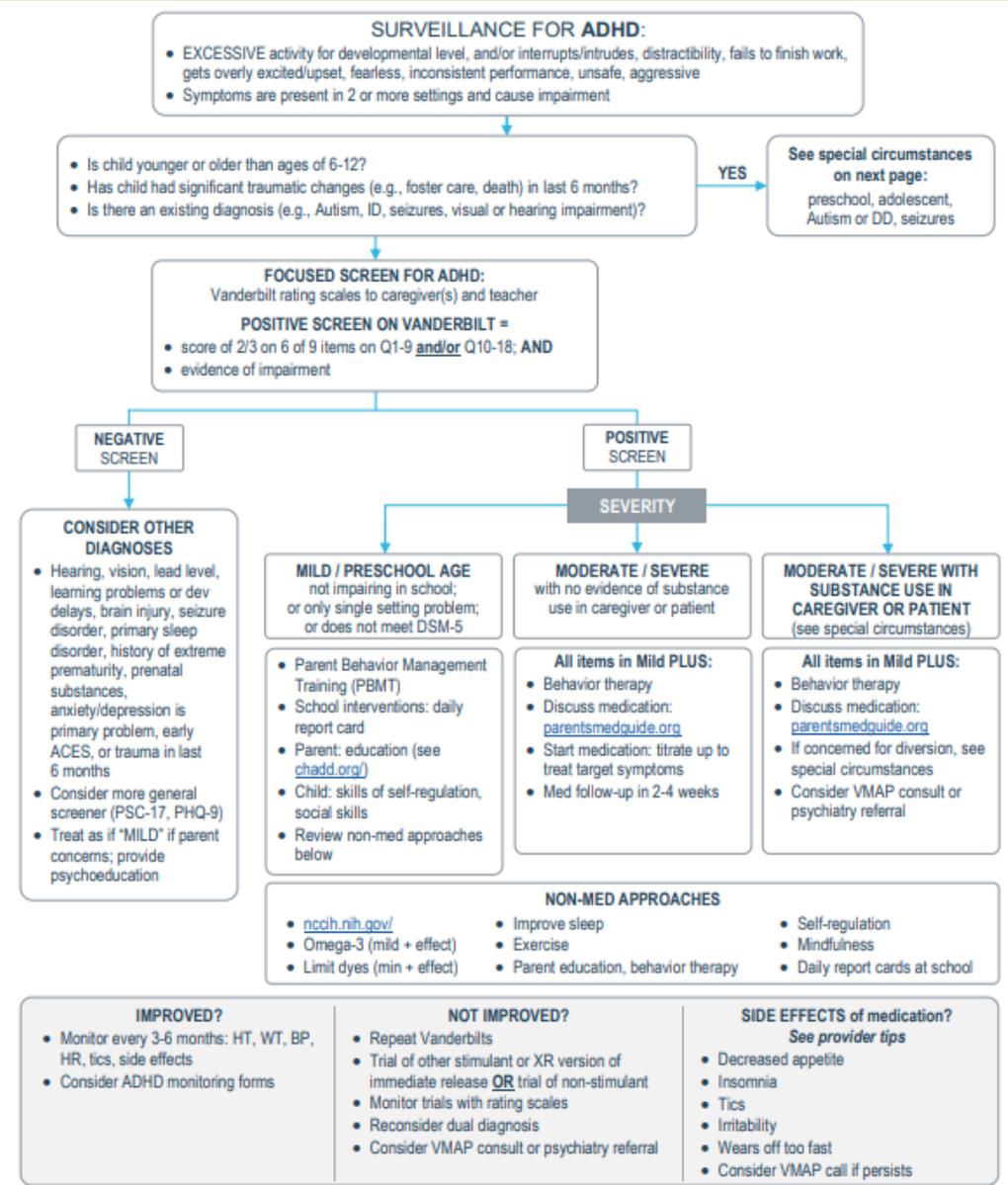
ABSTRACT: Attention-deficit/hyperactivity disorder (ADHD) is the most common childhood neurodevelopmental disorder and is associated with an array of coexisting conditions that complicate diagnostic assessment and treatment. ADHD and its coexisting conditions may impact function across multiple settings (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* 41:535–557, 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



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.



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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/>



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

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. Diekroger, 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*

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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)

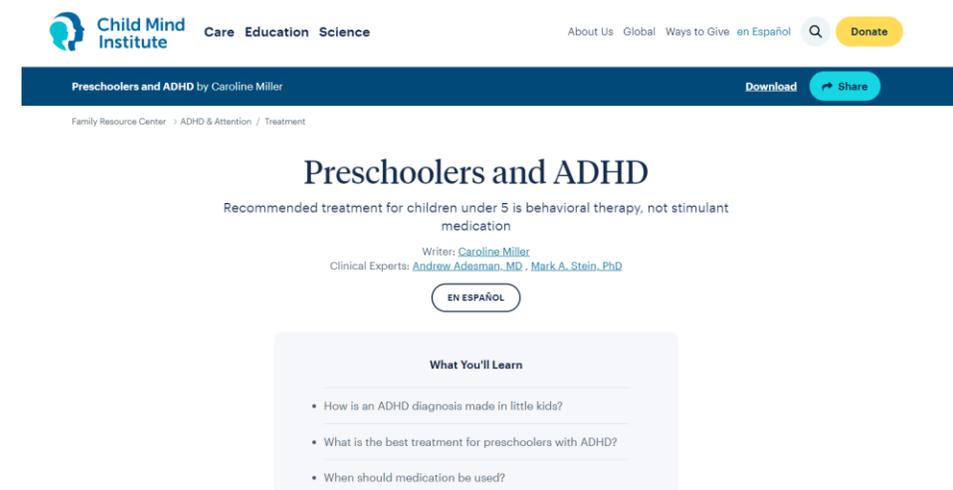
Complex ADHD: Ongoing Monitoring

- 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



The screenshot shows the top portion of a webpage from the Child Mind Institute. The header includes the logo and name 'Child Mind Institute' with the tagline 'Care Education Science'. Navigation links for 'About Us', 'Global', 'Ways to Give', 'en Español', and a search icon are visible, along with a yellow 'Donate' button. A dark blue navigation bar contains the page title 'Preschoolers and ADHD by Caroline Miller', a 'Download' button, and a 'Share' button. Below this, the breadcrumb trail reads 'Family Resource Center > ADHD & Attention / Treatment'. The main heading is 'Preschoolers and ADHD', followed by the subtext 'Recommended treatment for children under 5 is behavioral therapy, not stimulant medication'. The author is listed as 'Writer: Caroline Miller' and clinical experts as 'Andrew Adesman, MD, Mark A. Stein, PhD'. A button labeled 'EN ESPAÑOL' is present. A section titled 'What You'll Learn' contains three bullet points: 'How is an ADHD diagnosis made in little kids?', 'What is the best treatment for preschoolers with ADHD?', and 'When should medication be used?'.

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

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

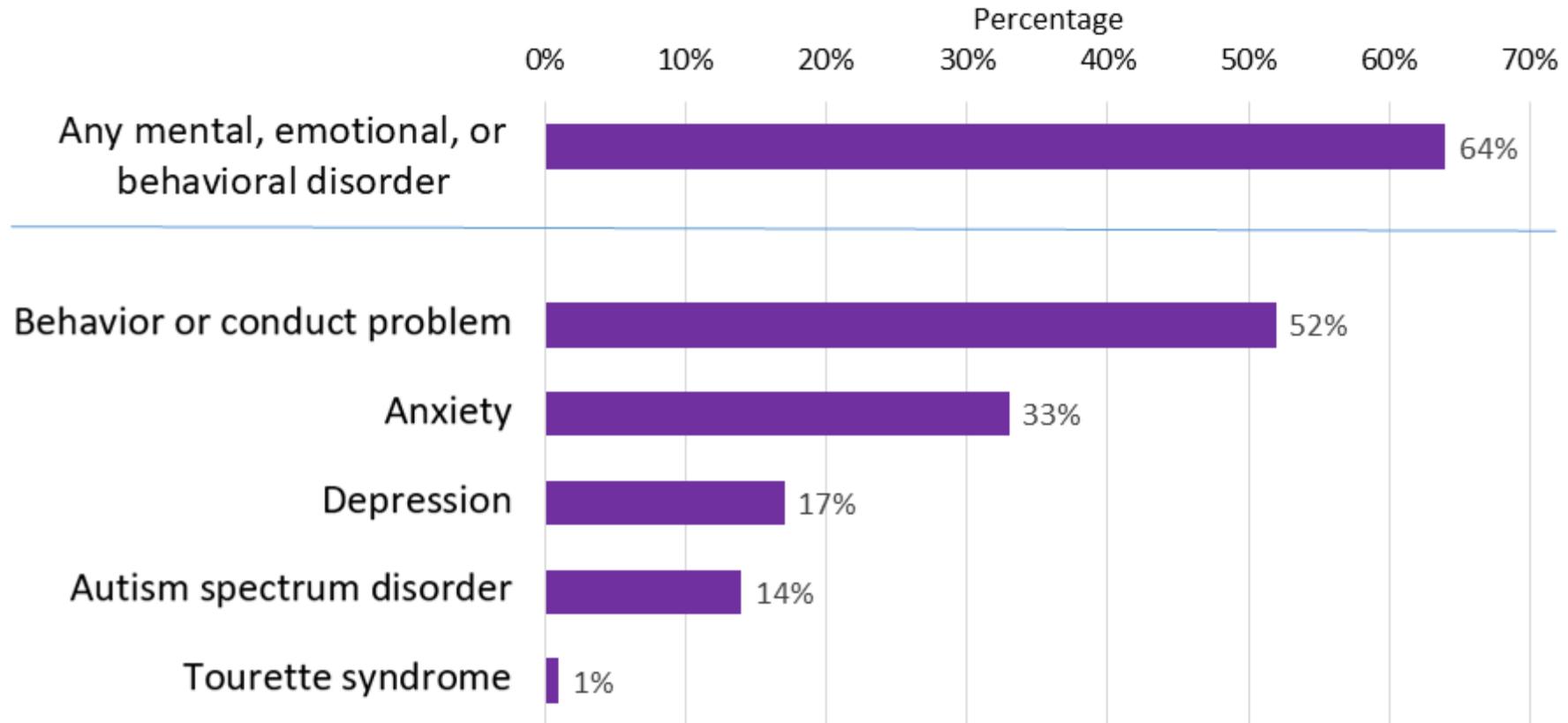
Transition to Adulthood

- 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



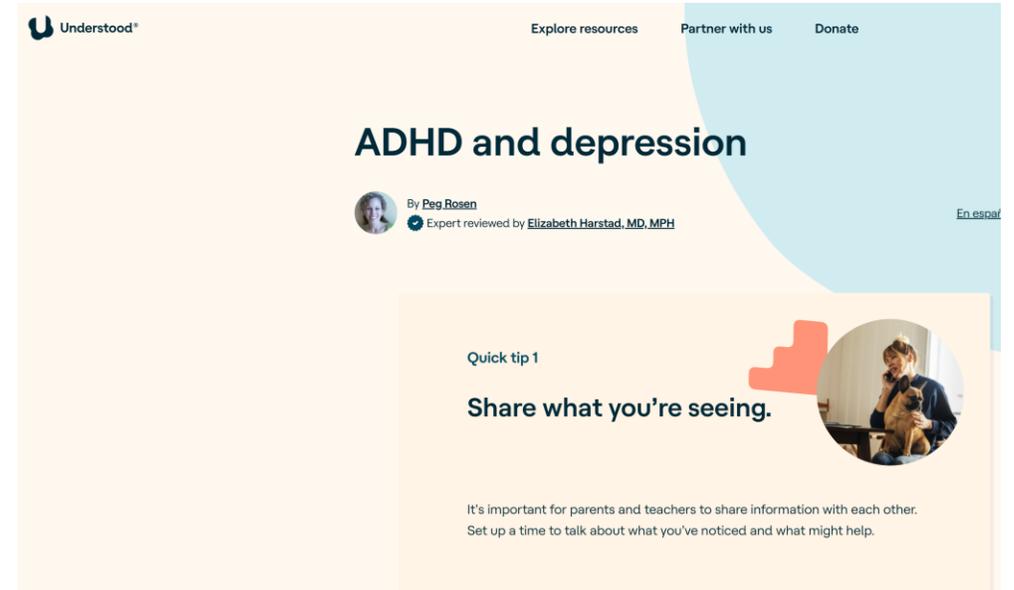
Coexisting Anxiety

- 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 top navigation bar of the HealthyChildren.org website. It includes links for 'OUR SPONSORS', 'LOG IN | REGISTER', a language toggle for 'en ESPAÑOL', and the American Academy of Pediatrics logo with the tagline 'DEDICATED TO THE HEALTH OF ALL CHILDREN®'. Below the navigation bar is the 'healthychildren.org' logo, a search bar with the placeholder text 'Search for safety, tips, illness, etc.', and a 'shopAAP' button. The main navigation menu includes 'Ages & Stages', 'Healthy Living', 'Safety & Prevention', 'Family Life', 'Health Issues' (which is highlighted), 'News', 'Tips & Tools', and 'Our Mission'. The breadcrumb trail reads 'Healthy Children > Health Issues > Conditions > Emotional Problems > Anxiety Disorders and ADHD'. The page title is 'Anxiety Disorders and ADHD'. Below the title are social sharing buttons for Facebook (Share), Pinterest (Pin), Email, and Print. The main text begins with: 'As with disruptive behavior disorders, there is a great deal of overlap between anxiety disorders and ADHD. About one fourth of children with ADHD also have an anxiety disorder. Likewise, about one fourth of children with anxiety disorders have ADHD. This includes all types of anxiety disorders—generalized anxiety disorder, obsessive-compulsive disorder, separation anxiety, and phobia (including social anxiety). Younger

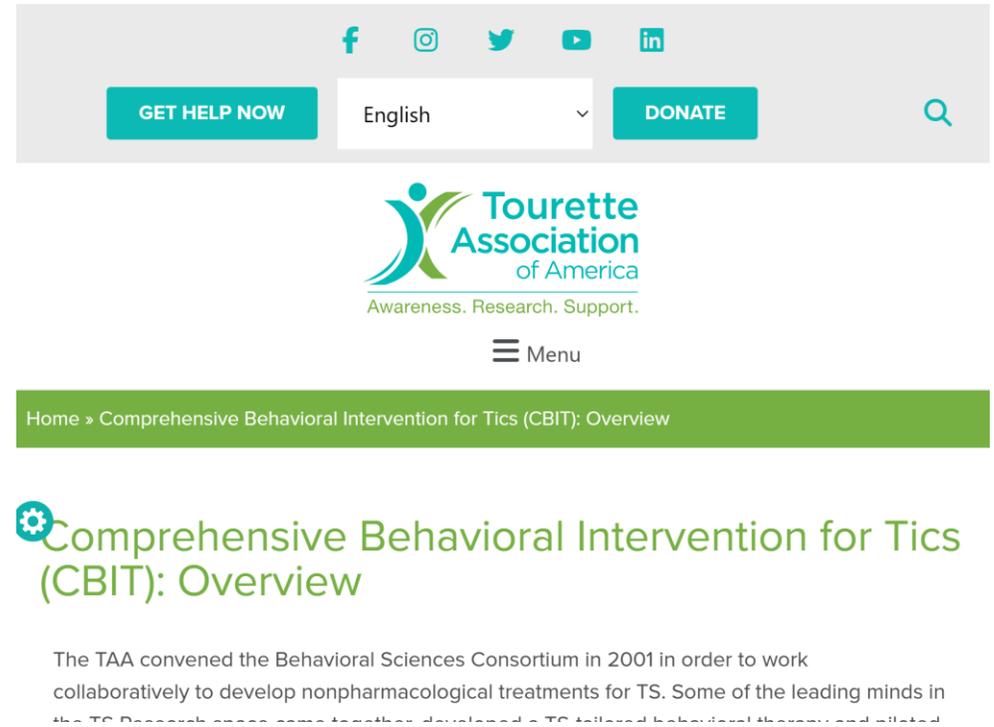
Coexisting Mood Disorders

- **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. There are buttons for "GET HELP NOW" and "DONATE", a language dropdown menu set to "English", and a search icon. The main header features the Tourette Association of America logo with the tagline "Awareness. Research. Support." and a "Menu" button. Below the header is a green breadcrumb trail: "Home » Comprehensive Behavioral Intervention for Tics (CBIT): Overview". The main content area has a green gear icon followed by the title "Comprehensive Behavioral Intervention for Tics (CBIT): Overview". Below the title is a paragraph of text: "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 related..."

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

The screenshot shows the HealthyChildren.org website. At the top, there are navigation links for 'OUR SPONSORS', 'LOG IN | REGISTER', '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', 'News', 'Tips & Tools', and 'Our Mission'. The 'Health Issues' section is active, showing a list of conditions including Abdominal, ADHD, Allergies & Asthma, Autism, and Cancer. The main content area displays the article title 'ADHD and Substance Abuse: The Link Parents Need to Know' with social sharing buttons for Facebook, Pinterest, Email, and Print. A breadcrumb trail at the top of the article reads: 'Healthy Children > Health Issues > Conditions > ADHD > ADHD and Substance Abuse: The Link Parents Need to Know'.

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

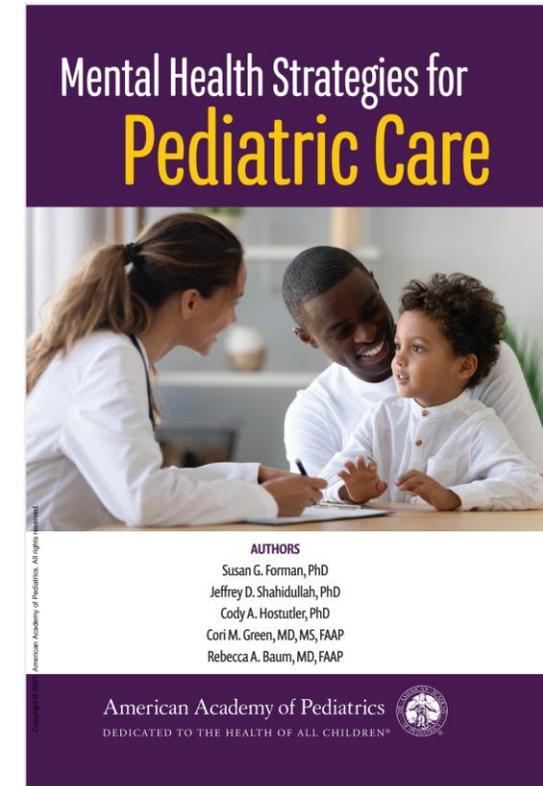
Steps to Clarify Diagnosis

- 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

[Resources for Families - ADHD & Learning Differences Program | Children's National Hospital \(childrensnational.org\)](#)

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

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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;¹ Joseph F. Hagan, Jr, MD, FAAP;^{2,3} Carla Allan, PhD;^{4,5} Eugenia Chan, MD, MPH, FAAP;⁴ Dale Davison, MSPEd, PCC;^{6,7} Marian Earls, MD, MTS, FAAP;⁸ Steven W. Evans, PhD;^{9,10} Susan K. Flinn, MA;¹¹ Tanya Froehlich, MD, MS, FAAP;¹² Jennifer Frost, MD, FAAP;¹³ Joseph R. Holbrook, PhD, MPH;¹⁴ Christoph Ulrich Lehmann, MD, FAAP;¹⁵ Herschel Robert Lessin, MD, FAAP;¹⁶ Kymika Okechukwu, MPA;¹⁷ Karen L. Pierce, MD, DFAACAP;¹⁸ Jonathan D. Winner, MD, FAAP;¹⁹ William Zurhellen, MD, FAAP;²⁰ 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**									
Concerta®	6-17 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	Relecor® Bioresequivalent to corresponding Concerta dosing	45mg	63mg	72mg
Focalin® XR† (dexmethylphenidate)	6-17 Yrs: 5-30mg SD: 5mg 18 Yrs-Adult: 5-60mg SD: 5mg Biphasic – 50/50	5mg	10mg	15mg	20mg	25mg	30mg	35mg	40mg
Cotempla XR-ODT† ⁵ (grape flavor)	6-17 Yrs: 8.6-51.8mg SD: 17.3mg	8.6mg	17.3mg	25.9mg	34.6mg	51.8mg			
Apertisio® XR†	6 Yrs-Adult: 10-60mg SD: 10mg Biphasic – 40/60	10mg	15mg	20mg	30mg	40mg	50mg	60mg	
Quilivant XR® (banana flavor)	6 Yrs-Adult: 20-60mg SD: 20mg	10mg 2mL	15mg 2mL	20mg 4mL	30mg 6mL	40mg 8mL	50mg 10mL	60mg 12mL	
QuillChew ER® ⁹ (cherry flavor)	6 Yrs-Adult: 20-60mg SD: 20mg Biphasic – 30/70	20mg	30mg	40mg	60mg				
Ritalin® LA†	6-12 Yrs: 10-60mg SD: 20mg Biphasic – 50/50	10mg	20mg	30mg	40mg	60mg			
Metadate® CD†	6-17 Yrs: 10-60mg SD: 20mg Biphasic – 30/70	10mg	20mg	30mg	40mg	60mg			
Metadate® ER†	6 Yrs-Adult: 20-60mg SD: 20mg	10mg	20mg	30mg	40mg	60mg			
Methylphenidate Pro-Drug Formulations - Long Acting, Oral**									
Azstary® ¹⁰ (dexmethylphenidate + serdexmethylphenidate)	6-12 Yrs: 26.1/5.2 – 52.3/10.4 SD: 39.2/7.8 mg Adult: 39.2/7.8 – 52.3/10.4 SD: 39.2/7.8mg	26.1mg SD/ 5.2mg d-MPH	39.2mg SD/ 7.8mg d-MPH	52.3mg SD/ 10.4mg d-MPH					
Methylphenidate Formulations – Long Acting/Delayed Onset, Oral**									
Jornay PM®†	6 Yrs-Adult: 20-100mg (dosed in the evening) SD: 20mg	20mg	40mg	60mg	80mg	100mg			
Methylphenidate Formulations – Short Acting, Oral**									
Focalin® (dexmethylphenidate)	6-17 Yrs: Daily: 5-20mg, divided BID; SD: 2.5mg BID	2.5mg	5mg	10mg					
Ritalin®	6-12 Yrs: Daily: 10-60mg divided BID or TID; SD: 5mg BID Adults: Daily: 10-60mg, divided BID or TID	5mg	10mg	20mg					
Methylin Chewables® (grape flavor)	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					
Methylin® Solution (grape flavor)	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						

Methylphenidate Formulations - Long Acting, Transdermal

Daytrana® (methylphenidate transdermal system) 1.5x3.395 mg/hr

Daytrana® (methylphenidate transdermal system) 3.3 mg/hr

Daytrana® (methylphenidate transdermal system) 6.7 mg/hr

Daytrana® (methylphenidate transdermal system) 10 mg/hr

Daytrana® (methylphenidate transdermal system) 15 mg/hr

Daytrana® (methylphenidate transdermal system) 20 mg/hr

Daytrana® (methylphenidate transdermal system) 30 mg/hr

Daytrana® (methylphenidate transdermal system) 40 mg/hr

Daytrana® (methylphenidate transdermal system) 60 mg/hr

Daytrana® (methylphenidate transdermal system) 80 mg/hr

Daytrana® (methylphenidate transdermal system) 100 mg/hr

Daytrana® (methylphenidate transdermal system) 120 mg/hr

Daytrana® (methylphenidate transdermal system) 150 mg/hr

Daytrana® (methylphenidate transdermal system) 180 mg/hr

Daytrana® (methylphenidate transdermal system) 200 mg/hr

Daytrana® (methylphenidate transdermal system) 240 mg/hr

Daytrana® (methylphenidate transdermal system) 280 mg/hr

Daytrana® (methylphenidate transdermal system) 320 mg/hr

Daytrana® (methylphenidate transdermal system) 360 mg/hr

Daytrana® (methylphenidate transdermal system) 400 mg/hr

Daytrana® (methylphenidate transdermal system) 440 mg/hr

Daytrana® (methylphenidate transdermal system) 480 mg/hr

Daytrana® (methylphenidate transdermal system) 520 mg/hr

Daytrana® (methylphenidate transdermal system) 560 mg/hr

Daytrana® (methylphenidate transdermal system) 600 mg/hr

Daytrana® (methylphenidate transdermal system) 640 mg/hr

Daytrana® (methylphenidate transdermal system) 680 mg/hr

Daytrana® (methylphenidate transdermal system) 720 mg/hr

Daytrana® (methylphenidate transdermal system) 760 mg/hr

Daytrana® (methylphenidate transdermal system) 800 mg/hr

Daytrana® (methylphenidate transdermal system) 840 mg/hr

Daytrana® (methylphenidate transdermal system) 880 mg/hr

Daytrana® (methylphenidate transdermal system) 920 mg/hr

Daytrana® (methylphenidate transdermal system) 960 mg/hr

Daytrana® (methylphenidate transdermal system) 1000 mg/hr

Administration Key:

- † Daily disintegrating tablet
- ‡ Must be swallowed whole
- § Chewable
- ¶ Can be mixed with yogurt, orange juice, or water
- ‡ Can open capsule and sprinkle medication on apple sauce
- ¶ Can open capsule and sprinkle medication into water or onto apple sauce
- ‡ Can open capsule and mix with apple sauce or yogurt
- † Indicates a generic formulation is also available; generic products are not shown
- ‡ Indicates a generic (but NOT a branded) formulation is available
- § View the latest version of the ADHD Medication Guide at www.ADHDMedicationGuide.com



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

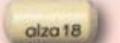
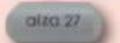
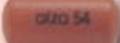
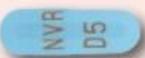
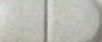
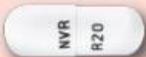
Ages 9-11: ADHD-Predominantly Inattentive Presentation

- 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 	Relaxii® 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 			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 			20mg 	G	30mg 	G	40mg 	
Metadate® CD‡	6-17 Yrs: 10–60mg; SD: 20mg (biphasic – 30/70)	G♦	10mg 			20mg 	G♦	30mg 	G♦	40mg 	
Metadate® ER†	6 Yrs-Adult: 20–60mg; SD: 20mg	G♦	10mg 			20mg 	G♦				

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

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