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ADHD in Adolescents and Adults

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Disclosures

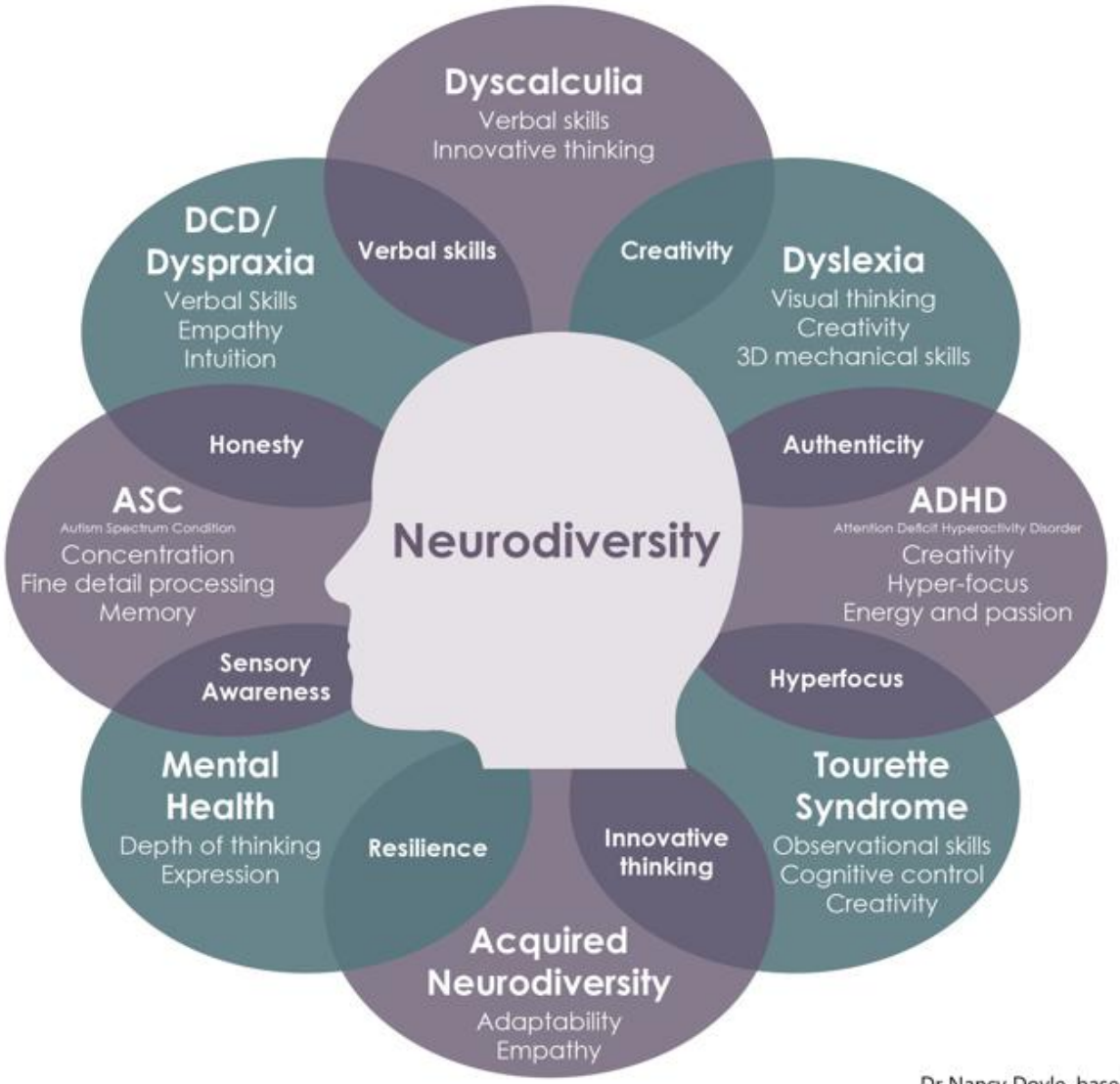
- None

Objectives

- Understand the concept of neurodiversity
- Define ADHD
- Review the diagnostic criteria and challenges with diagnosis for ADHD in adults
- Explore our role as family medicine physicians in diagnosis and treatment
- Discover the prevalence of comorbid conditions associated with ADHD
- Obtain a general understanding of the categories of medical treatments available for adults with ADHD
- Gain a deeper appreciation for the role that biases play in the under- and misdiagnosis of women and BIPOC

What I will not cover

- ADHD diagnosis and management in children
- Neurobiology of ADHD
- Integrative management of ADHD
- In depth discussion of medication choices and treatment of comorbid conditions
- Cost of medications and insurance coverage of treatments



Dr Nancy Doyle, based on the work of Mary Colley

Neurodiversity

Neurological variations are disabilities, but they are not flaws

These variations are a vital part of the diversity of humanity just like size, shape, skin color, and personality

Goal is to embrace neurological variations as part of the mainstream as opposed to trying to "cure" or "fix" these differences

Work to accommodate these differences instead of making them conform to a neurotypical society

“The state of being mentally or physically challenged is what [disability theorists] term being impaired; with impairment comes personal challenges and drawbacks in terms of mental processes and physical mobility…. **Disability, in contrast, is the political and social repression of impaired people.** This is accomplished by making them economically and socially isolated. Disabled people have limited housing options, are socially and culturally ostracized, and have very few career opportunities.”

- Sunny Taylor “The Right Not to Work: Power and Disability”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Equity
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What is ADHD?

ADHD = Attention-Deficit Hyperactivity Disorder

Behavior disorder that is characterized by inattention, impulsivity, and in some cases hyperactivity

Impacts executive functioning (parts of the brain that help us plan, focus on, and execute tasks)

General population prevalence of ADHD in adults is ~4.4%

Challenges faced by persons with ADHD

- Attentional dysfunction
- Deficient inhibition
- Emotional dysregulation
- Difficulty with decision making
- Challenges with time management and organization
- Strains on personal, social, academic, professional lives
- Productivity and income losses
- Higher risk of developing mood/anxiety disorder

Two studies done by Kuriyan et al. (2013) found these outcomes for young adults diagnosed with ADHD:

15% hold a 4-year degree compared to 48% of the control group

0.06% held a graduate degree compared to 5.4% of the control group

11 times more likely to be unemployed and not in school

They earned close to $2 per hour less in wages than the comparison group

Rask factors for ADHD

Inheritability is by far the largest predictor of ADHD expression

According to Barkley (2015), the risk of having ADHD if a family member also has ADHD are the following:

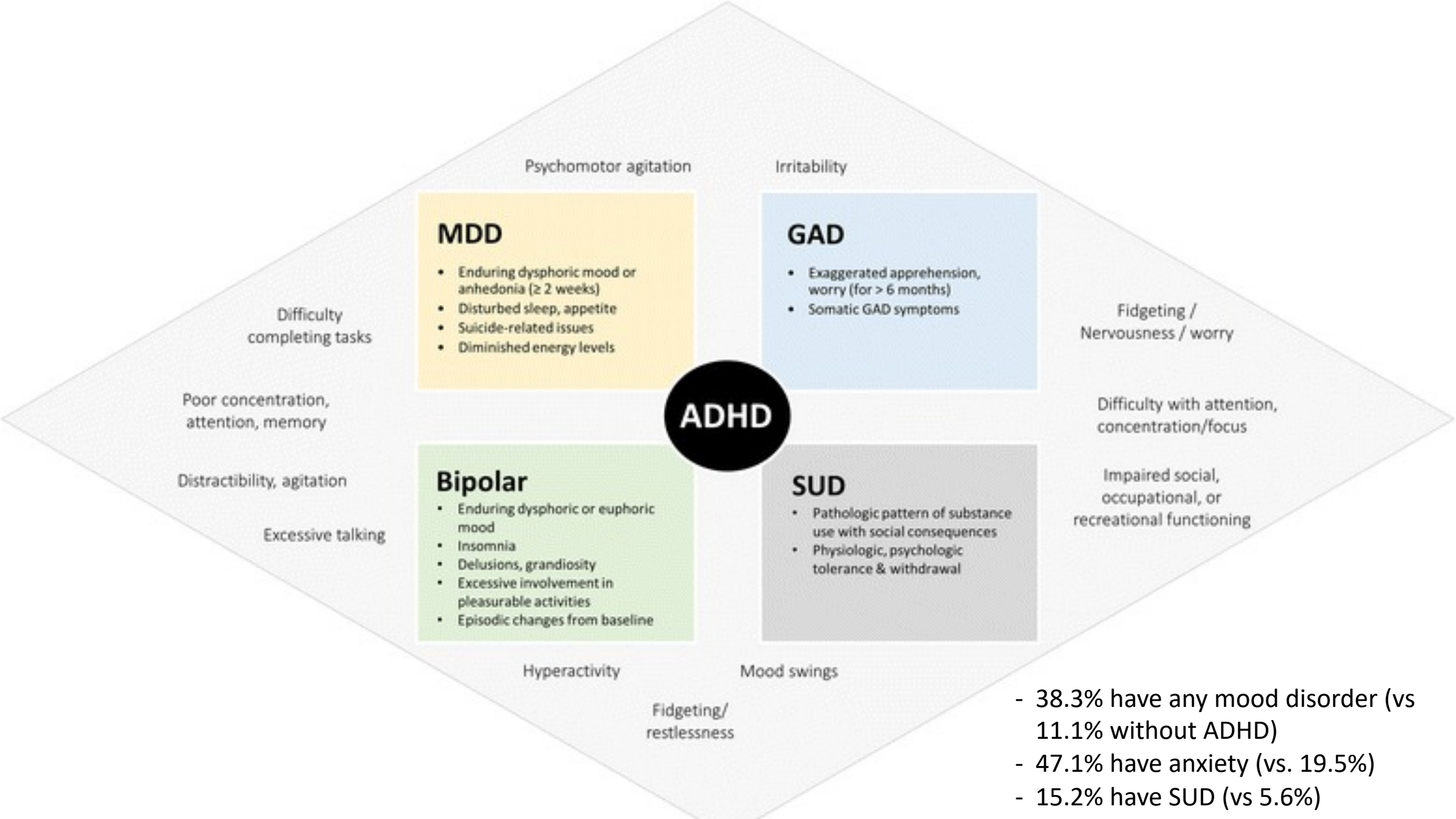
- If a parent has ADHD, the child has up to 57% chance of also having ADHD.
- If a sibling has ADHD, the other sibling has ~32% chance of having ADHD.
- If a twin has ADHD, the other twin has ~70%–80% chance of having ADHD.

Other factors that could contribute to ADHD: prenatal exposure to alcohol/tobacco, premature delivery, low birth weight, high lead levels in childhood, postnatal injury to prefrontal regions of the brain

Comorbid conditions

National Comorbidity Survey reported that when compared to adults without ADHD, those with ADHD are:

- 3x more likely to develop MDD
- 6x more likely to develop dysthymia
- 4x more likely to have any mood disorder
- 2x more likely to experience substance use disorder of any kind
- 70% more likely to be obese



- 38.3% have any mood disorder (vs 11.1% without ADHD)
- 47.1% have anxiety (vs. 19.5%)
- 15.2% have SUD (vs 5.6%)

Symptoms of ADHD

Inattention

- Makes careless mistakes/lacks attention to detail
- Difficulty sustaining attention
- Does not seem to listen when spoken to directly
- Struggles to follow through on tasks and instructions
- Difficulty with organization
- Avoids/dislikes tasks requiring sustained mental effort
- Loses things necessary for tasks/activities
- Easily distracted (including unrelated thoughts)
- Is forgetful in daily activities

Hyperactivity/Impulsivity

- Fidgets with or taps hands or feet, squirms in seat
- Difficulty remaining seated
- Experiences feelings of restlessness
- Has difficulty engaging in quiet, leisurely activities
- Is “on-the-go” or acts as if “driven by a motor”
- Talks excessively
- Blurts out answers before questions have been completed
- Has difficulty waiting or taking turns
- Interrupts or intrudes on others

DSM-5 Diagnostic Criteria

1. ≥5 symptoms of inattention and/or ≥5 symptoms of hyperactivity/impulsivity must have persisted for ≥6 months to a degree that is inconsistent with the developmental level.
2. Several symptoms were present before the age of 12 years (may need collateral info)
3. Several symptoms are present in ≥2 settings (eg, at home, school, or work; with friends or relatives; in other activities).
4. There is clear evidence that the symptoms interfere with or reduce the quality of social, academic, or occupational functioning.
5. The symptoms are not better explained by another mental disorder (such as a mood disorder, anxiety disorder, dissociative disorder, or a personality disorder). The symptoms do not happen only during the course of schizophrenia or another psychotic disorder.

Self-rating measures

Can be valuable for providing a comprehensive clinical picture	**Adult ADHD Self-Report Scale (ASRS) Symptom Checklist** (18 questions, FREE)
	Barkley Adult ADHD Rating Scale (BAARS) (18-item scale adapted from a children's version, $175)
Take 5-20 minutes to complete on average	**Brown Attention-Deficit Disorder Symptom Assessment Scale for Adults** (40-item scale assessing symptoms in various domains, $300+)
	Connors Adult ADHD Rating Scales (8 scales assessing patient and physician ADHD ratings, $75)

Three presentations of ADHD

- **Combined Presentation:** if enough symptoms of both criteria inattention and hyperactivity-impulsivity were present for the past 6 months
- **Predominantly Inattentive Presentation:** if enough symptoms of inattention, but not hyperactivity-impulsivity, were present for the past six months (*most common presentation in adults*)
- **Predominantly Hyperactive-Impulsive Presentation:** if enough symptoms of hyperactivity-impulsivity, but not inattention, were present for the past six months

Is adult ADHD just a continuation of childhood onset ADHD?

There is evidence that children do not “outgrow” ADHD in the majority of cases

- Recent follow-up studies of children with ADHD show that ADHD symtpoms continue from childhood into adolescence in 50%–80% of cases, and into adulthood in 35%–65% of cases (Owens et al. 2015)
- However, only 15% continue to meet full diagnostic criteria

Longitudinal study published in JAMA Psychiatry showed that a large portion of people who meet criteria for ADHD as adults did NOT meet criteria as children (Biederman et. al. 2016)

- Proposes that childhood-onset and adult-onset ADHD may be entirely distinct syndromes

Patients should not be denied services because *DSM-5* requires an earlier onset

Who can diagnose ADHD?

- Clinical psychologists
- Clinical social workers
- Physicians (family medicine doctors, psychiatrists, neurologists, or other types of physicians)

Should be someone who has both the time and the experience to make a thorough assessment of the individual and to rule out other possible related conditions

Adult ADHD Assessment and Diagnosis Approach

AAFP national research network

It is suggested that the diagnosis of adult ADHD requires 2-3 visits. Assessment of ADHD is not a clinical emergency and requires enough time to gather necessary evidence for the diagnosis.

Suspect ADHD

Self-referral
Adult patient referred for assessment of potential ADHD
Re-assessment of adult patient previously diagnosed with ADHD in childhood

First Visit

- Standard mental health assessment
- Review current symptoms*
- Assess current symptom using a brief validated tool*
- Assess functional impairment at home, work, school and in relationships*
- Identify comorbidities*
- Perform screening for substance use*
- Exclude other disorders
- Assess physical health
- Gather/review additional information
- Request past medical records and complete medical history
- Request childhood and developmental history*
- Identify informants and obtain consent to contact them to collect information*
- Schedule a second visit, preferably include an informant who can corroborate symptoms

Second Visit (in 2-4 weeks)

- Review gathered information and assessment results
- Interview for corroboration of childhood symptoms
- Interview for corroboration of current symptoms and disfunction
- Consider severity of impairment
- Meets DSM-5 criteria for ADHD diagnosis*
- Confirm and document diagnosis

Consider Referral*: Consider referral to a psychiatrist in the following several presentations and co-conditions:

- Extreme or severe dysfunction
- Suicidal or homicidal ideations
- Substance use or dependence
- Psychosis
- Extreme psychosocial stressors or present traumatic events
- Previous treatment failures
- Atypical presentation – if presentation as brand new symptoms this is not ADHD, even if not diagnosed as a child the symptoms must concur

Third Visit

- Explain diagnosis*
- Discuss treatment options, risks and benefits*; shared decision-making
- Consider non-pharmacological management*
- Initiate treatment if recommended*
- Discuss need for treatment monitoring
- Educate patient on their responsibilities in managing their condition and self-management strategies

Follow-up Visits

- New diagnosis, uncontrolled symptoms or change in medication – within 30 days; monthly until functionality is significantly improved; every 3-6 months once stabilized
- Review symptoms and functional abilities, including diurnal variations in symptoms
- Review impressions of informants
- Monitor for drug adverse effects*
- Monitor for adherence to therapy
- Monitor vital signs (weight, blood pressure and heart rate)
- Monitor for signs of misuse/abuse/diversion
- Adjust therapy as needed
- Assist with additional management strategies for psychological, behavioral, occupation and educational needs (e.g., skill-building trainings, psycho-education, parenting, vocational and/or educational accommodation)*

* = Resource available in this Toolkit; this approach is suggested as a general guidance only and is modifiable to fit local context; second and third visits can be combined if enough evidence to diagnose ADHD and initiate treatment

Authors: Loskutova N, Callen E, Lutgen C; 2019, AAFP National Research Network
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Comprehensive ADHD assessments

Helpful for patients who present with cases that are not straightforward or whose history/findings do not clearly indicate a diagnosis of ADHD	Neuropsychological Assessments at Jefferson (215-955-1111)
	Behavioral Health Assessments at Cherry Hill Campus (800-528-3425)
	Adult ADHD program at Penn through Penn Psychiatry (Note: services are out of network for all insurances except for specific Penn employee/student plans)
	Patient's insurance companies can provide a list of clinicians with expertise in diagnosing ADHD

Diagnostic challenges

- Overlapping symptoms between ADHD and comorbid psychopathologies makes diagnosis and treatment challenging (up to 80% have at least one co-existing psychiatric disorder)
- Emotional dysregulation often mistaken for mood disorder, symptoms of ADHD masked by SUD, etc.
- Often has a more heterogeneous clinical presentation than that of pediatric populations
- Physicians often more familiar with mood/anxiety disorders
- Many young adults stop seeing doctors regularly after age 18

How women and girls with ADHD are given short shrift with treatment, other forms of help

Misdiagnosis based on gender bias

- Women with ADHD often experience less hyperactive symptoms and more inattentive symptoms
- Tendency of female children with ADHD to achieve better grades in school than male children with ADHD, which biases educators, parents, and providers
- Male children more likely to be referred for treatment due to external symptoms (2.5 boys are diagnosed for every girl)
- Historical societal pressures/norms that women are conditioned at a young age to place blame on themselves
- Studies show that women with ADHD more likely to self harm and attempt suicide, be victims of IPV, and have higher rates of unplanned pregnancy (4x as many as women without ADHD)

Black women with ADHD start healing, with a diagnosis at last

Miché Aaron's academic work in planetary sciences dramatically improved after she was diagnosed with attention-deficit/hyperactivity disorder. "I simply thought I was a lazy student and I needed to try harder," Aaron said, wiping away tears. (Will Kirk/Johns Hopkins University)

Racial bias in ADHD diagnosis

- Signs of inattentiveness and impulsivity often mischaracterized as “laziness” or “defiance” in BIPOC
- White male children more likely to be diagnosed and treated for ADHD than anyone else even though ADHD does not discriminate by race or gender
- By 10th grade, white children are 2x more likely to receive an ADHD diagnosis than black children
- BIPOC children/adolescents underdiagnosed due to racial bias, lack of access to care/resources, stigma from educators and health providers

Treatment

According to a National Comorbidity Survey Replication in the US (n=3199), only 11% of adults with ADHD were receiving treatment (as opposed to 77% of children with ADHD)

Multimodel approach to treatment

- Medication (~60% of people see improvement in symptoms and quality of life)
- Skills training
- Counseling
- Behavioral therapy
- Integrative medicine
- Educational supports/accommodations
- Treating co-occurring conditions

Psychostimulants

- Best-known ADHD medications and still the standard of care
- Largely safe and efficacious in adult patients
- *MOA:* methylphenidate and amphetamine increase dopamine in the prefrontal cortex by inhibiting reuptake
- *Side effects:* decreased appetite, weight loss, headache, insomnia, abdominal pain, irritable mood
- Longer-acting (extended release) formulation preferred by patients due to control of symptoms for longer periods
- Shorter-acting formulation useful for PRN dosing or for specific windows of time where ADHD symptoms are distressing (e.g. if a patient needs to attend business meetings in the afternoons)

Psychostimulants

Short-acting formulations (start working within 30-45 min, last 3-6 hr)

- Dexmethylphenidate (Focalin)
- Dextroamphetamine (Zenzedi, Procentra)
- Dextroamphetamine/amphetamine (Adderall)
- Methylphenidate (Ritalin, Methylin)

Intermediate-acting formulations

- Amphetamine sulfate (Evekeo)
- Methylphenidate (Metadate ER, Methylin ER, Ritalin SR)

Longer-acting formulations (last 8-12 hr)

- Dexmethylphenidate (Focalin XR)
- Dextroamphetamine/amphetamine (Adderall XR)
- Lisdexamfetamine (Vyvanse)
- Methylphenidate (Concerta, Daytrana, Metadate ER, Quillivant XR, Ritalin LA)

Psychostimulant misuse/diversion

Prevalence of misuse/diversion is 5-10% among high school students and 5-35% among college students

Important to maintain correct use of stimulants (reviewing PDMP, establishing good long-term relationship with patients, having frequent follow-up after initial prescription, UDS if indicated)

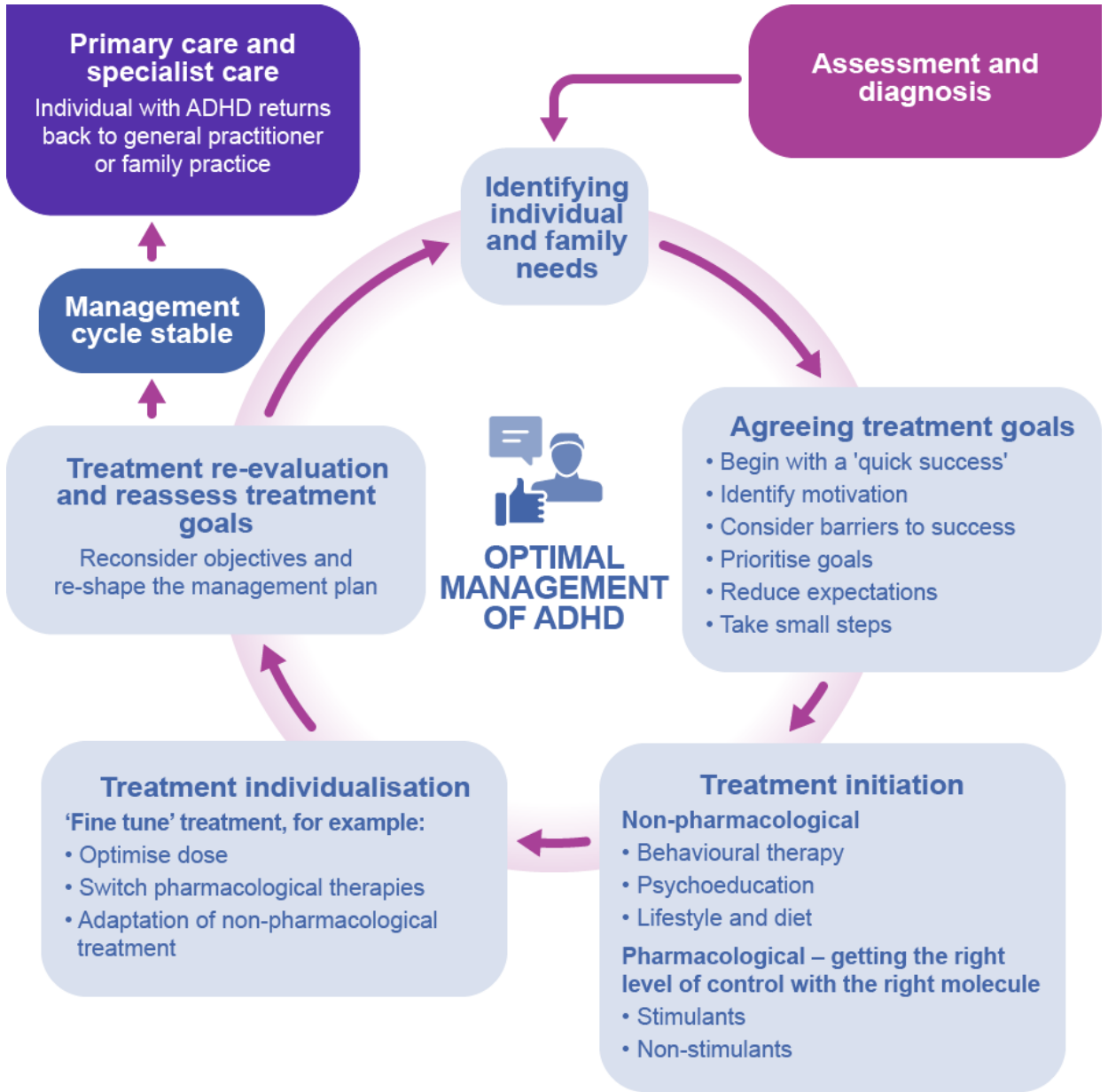
Note: there is no causal relationship between psychostimulant prescriptions (that are properly prescribed for ADHD treatment) and development of SUD

Atomoxetine (Strattera)

- *MOA:* selective norepinephrine reuptake inhibitor
- *Side effects:* decreased appetite, nausea, vomiting, diarrhea, fatigue, mood swings, dizziness, possible increased SI in adolescents
- Does not work as quickly as stimulants but effects can last up to 24 hours
- Needs to be taken everyday and will build up in a patient's system (takes 3-6 weeks to see full effect)
- Tends to be less effective than stimulant medication so it is considered second line
- Low abuse potential, good option if there is concern for SUD

Clonidine ER (Kapvay) & Guanfacine (Intuniv)

- *MOA:* alpha-2-agonists, exact MOA for ADHD is unknown
- *Side effects:* dry mouth, sedation, somnolence, dizziness, headache, constipation, bradycardia/hypotension, may worsen depressive symptoms
- Symptoms may respond over the course of 1-2 weeks
- Another second line option for patients with suboptimal results on stimulants
- Low abuse potential, good option if there is concern for SUD


Assessment and diagnosis
Identifying individual and family needs
Agreeing treatment goals
• Begin with a 'quick success'
• Identify motivation
• Consider barriers to success
• Prioritise goals
• Reduce expectations
• Take small steps
Treatment initiation
Non-pharmacological
• Behavioural therapy
• Psychoeducation
• Lifestyle and diet
Pharmacological – getting the right level of control with the right molecule
• Stimulants
• Non-stimulants
Treatment individualisation
'Fine tune' treatment, for example:
• Optimise dose
• Switch pharmacological therapies
• Adaptation of non-pharmacological treatment
Treatment re-evaluation and reassess treatment goals
Reconsider objectives and re-shape the management plan
OPTIMAL MANAGEMENT OF ADHD
Management cycle stable
Primary care and specialist care
Individual with ADHD returns back to general practitioner or family practice

Resources for patients

- Children and Adults with ADHD (CHADD)
  - Call center (1-866-200-8098) with trained staff to answer questions about ADHD
  - Adult to Adult peer support classes, educational webinars, network of professionals to turn to for help
- Job Accommodation Network (JAN)
- Books and podcasts
- Social media
  - Tiktok
  - Reddit: r/ADHD, r/adhdwomen
  - Instagram: @authenticallyADHD, @ADHDactually
  - Kaleidoscope Society (community for women and nonbinary folks with ADHD)
  - Unicorn Squad, Black People of of Marginalized Genders with ADHD (Facebook support group)

Key Takeaway Points

- ADHD is not just a childhood condition
- The symptoms of ADHD can be detrimental for patients and should be taken seriously by health care providers
- Family physicians should feel empowered to take an active role in the diagnosis of ADHD in adolescents and adults
- Diagnosis of ADHD can be challenging due to the prevalence of comorbid conditions and may need more thorough neuropsychological assessment
- Once ADHD is diagnosed, treatment can easily be managed by PCPs and can be life-changing for patients
- Need to be always cognizant of biases in medicine and society that contribute to the under- and misdiagnosis of women and BIPOC

Learning Resources for Providers

- Webinar: “Ask the Expert: Promoting Mental Health for Black Communities” https://chadd.org/webinars/ask-the-expert-promoting-mental-health-for-black-communities-for-families-parents-professionals/
- The Cribsiders: “All that Fidgets is Not ADHD”
- AAFP Adult ADHD Toolkit https://www.aafp.org/family-physician/patient-care/prevention-wellness/emotional-wellbeing/adhd-toolkit.html

Questions?

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