ADHD: Evidence Based Assessment & Management in Primary Care

Dr. Joan Flood
Family Physician, The Shoniker Clinic, Scarborough
Board Member, The Canadian ADHD Resource Alliance (CADDRA)
Chair, Advocacy Committee, CADDRA

1

Disclosures

Dr. Joan Flood

Honoraria, speaker fees, and unrestricted educational grants from the following companies:

- Purdue
- Janssen Ortho
- Shire-Takeda

***No financial or in-kind support has been received for this program**

2

Disclosure of Commercial Support

The Dept. of Family and Community Medicine rounds are made possible in part from pooled resources of unrestricted educational grants from

- AstraZeneca Canada Inc., Eli Lilly Canada Inc., Galderma Canada Inc. , Valeant Canada, Pediapharm.

Potential for conflict(s) of interest:

- Dr. Joan Flood will receive a small honorarium from the Department of Family and Community Medicine at the Scarborough Health Network
- Dr. Flood has received payment or funding from the organizations whose product(s) are being discussed in this program but not with respect to this presentation

3

Mitigating Potential Bias

- The organizers of this program select presentation topics based on the results of a needs assessment carried out every year. The speakers are asked to present information from the guidelines, that are based on evidence and expert opinion.
- The presenter of this program will discuss a variety of therapies, and will aim to use generic names and provide supporting evidence/references.

4

Learning Objectives

At the conclusion of this activity, participants will be able to:

- 1. Identify common misperceptions about ADHD that prevent many primary care physicians from confidently treating ADHD.
- 2. Apply 2018 Canadian ADHD Practice Guidelines to the assessment and management of ADHD in primary care
- 3. Review ADHD cases that are common presentations in Primary Care.

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5

CADDRA CANADIAN ADHD RESOURCE ALLIANCE

Canadian ADHD Practice Guidelines
Fourth Edition

6

Diagnostic and Statistical Manual (DSM-5) Presentations

*Total number of symptoms are less in adults (17+): 5 of 9 instead of 6 of 9

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7

Be Open to the Diagnosis of ADHD

- ADHD presents in many ways and if you limit your definition to the idea that it is the boy who misbehaves and underachieves in school then you will miss many in your practice.
- If you think you can pick up ADHD by how a person appears in a single session, you will miss it more times than not.
- ***Plus, ADHD isn't just a disorder that affects kids…***

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8

9

Why treat ADHD?

- ADHD is a medical disorder with serious impairments just as in diabetes and cardiovascular disease
- As primary care physicians, we treat Depression, Bipolar illness, Anxiety – why aren't we treating ADHD?

Don't underestimate the cost of NOT TREATING!

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10

What is ADHD?

- A neurodevelopmental disorder with diverse symptomatology around the key factors of inattention, impulsivity, hyperactivity and emotional dysregulation.
- Affects 5-9% of children and 3-5% of adults worldwide

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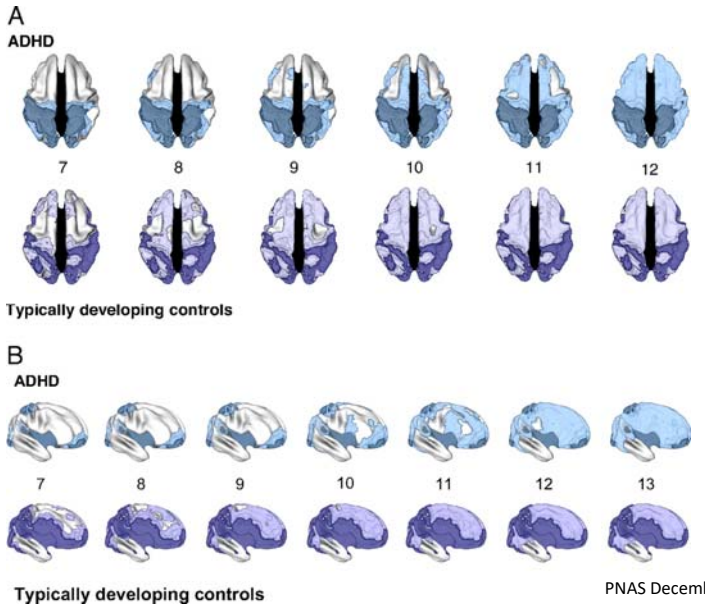
ADHD is characterized by a delay in cortical maturation



PNAS December 4, 2007 104 (49) 19649-19654

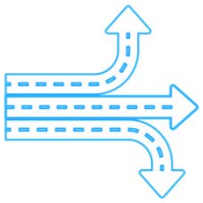
12

Developmental Impact

Adapted from: Bhat V, Hechtman L. Clinical Pharmacist. 2016;8(2).

13

ADHD and Comorbidity



- 50-90% of children with ADHD have at least one other comorbid disorder (e.g. ODD, anxiety, depression, autism, learning disabilities)
- 85% of adults meet the criteria for a comorbid disorder (e.g. anxiety, depression, bipolar disorder, conduct disorder, substance abuse, borderline personality disorder)
- ***The point here is that ADHD may be the underlying cause of many of these disorders that you are already treating!***

Kessler RC, et al. *Am J Psychiatry*. 2006;163:716-723.
Cumyn L et al. *Can J Psychiatry*. 2009;54(10):673-683

14

Myth??

- ADHD is overdiagnosed and overmedicated

15

ADHD in Canada 2016

	ADHD (ages 5–19)	ADHD – Adults (ages 20–64)
Total Population *(estimates)*	5,915,466	22,222,004
Prevalence [%]	6%	4.4%
Patients with ADHD	354,927	977,768
% Diagnosed & Treated	33%	7%
Patients Diagnosed & Treated	117,126	68,444

How many adults are left untreated? 909,324
How many Children? 237,801

Kessler RC et al. Am J Psychiatry 2006; Statistics Canada, 2016. % diagnosed calculated based on estimate of treated patients in Canada

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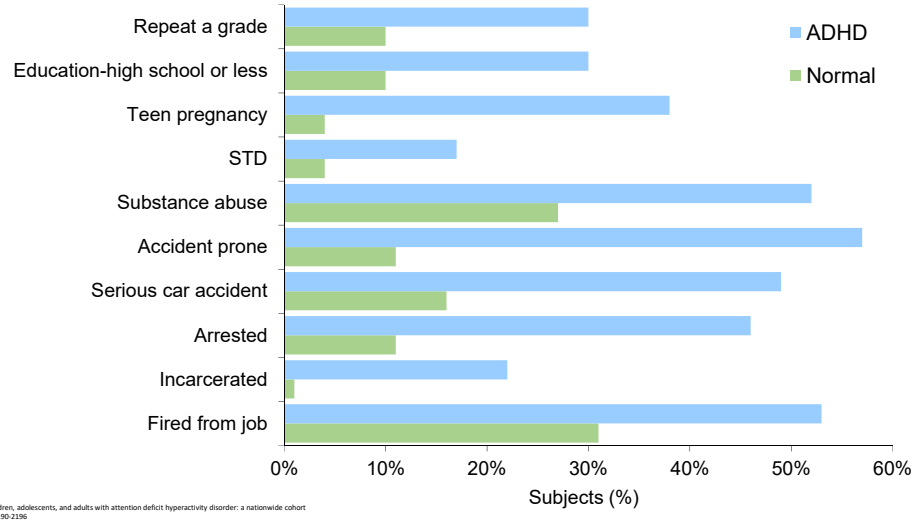
Myth??

- ADHD is not that big a deal – just pay attention and you'll be fine!
- Hey - you're a guy so that's normal.

17

Functional Impacts of ADHD



Dalsgaard, S., et al., Mortality in children, adolescents, and adults with attention deficit hyperactivity disorder: a nationwide cohort study. Lancet, 2015. 385(9983): p. 2190-2196

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Impact of Inadequately Treated ADHD

Individual with ADHD

Health Care System
- 50% ↑ in bike accidents[1]
- 33% ↑ in ER visits[2]
- 2-4 x more motor vehicle crashes[3-5]

Employer
- ↑ Absenteeism[14]
- and
- ↓ Productivity[14]

School & Occupation
- 46% Expelled[6]
- 35% Drop Out[6]
- Lower Occupational Status[7]

Family
- 3-5x ↑ Parental Divorce or Separation[11,12]
- 2-4 x ↑ Sibling Fights[13]

Society
- Substance Use Disorders (SUD)
- 2 X Risk[8,] Earlier Onset[9]
- Less Likely to Quit SUD in Adulthood[10]

1. DiScala et al., 1998
2. Liebson et al., 2001
3. NHTSA, 1997
4-5. Barkley et al., 1993; 1996
6. Barkley, et al., 1990
7. Manuzza et al., 1997
8. Biederman et al., 1997
9. Pomerleau et al., 1995
10. Wilens et al., 1995
11. Barkley, Fischer et al., 1991
12. Brown & Pacini, 1989.
13. Mash & Johnston, 1983
14. Noe et al., 1999

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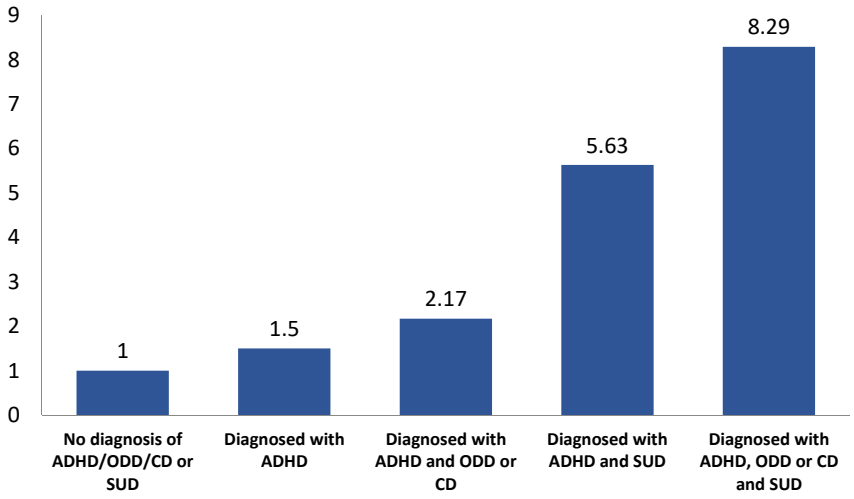
Mortality Rate Ratio



ADHD = Attention Deficit Hyperactivity Disorder; CD = Conduct Disorder; ODD = Oppositional Defiant Disorder; SUD = Substance Use Disorder. Dalsgaard S et al. Lancet 2015: 385: 2190-96.

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20

Myth??

- You can't have ADHD if you're smart and have good grades

21

Myth??

- Psychological testing is required to diagnose ADHD

22

Essentials of Diagnosis

- Clinical interview that identifies not only **current challenges** but also examines **past functioning, developmental history, academic/vocational history, social functioning, medical history and family history**

- Attention to presence of **co-morbid disorders**: Oppositional Defiant Disorder, Anxiety, Dysthymia, Depression, Autism…

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23

Screening Tools

The CADDRA e-Toolkit provides several assessment forms to screen for general mental health challenges as well as the specific impairments associated with ADHD.

Children	SNAP-IV, WFIRS-P, CADDRA Teacher Assessment form
Adolescents	ASRS, WFIRS-S, WFIRS-P, Teacher Assessment form
Adults	ASRS, WFIRS-S

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24

Myth??

- Behavioural interventions are not indicated since research has shown no significant effects on ADHD core symptoms

25

GUIDE TO ADHD PSYCHOSOCIAL INTERVENTIONS

At Home

Instructional
- Make eye and/or gentle physical contact before giving one or two clear instructions. Have instructions repeated back, or confirm they were understood, before proceeding

Behavioral
- Use a positive approach and calm tone of voice. Teach calming techniques to de-escalate conflict
- Use praise, catch them being good (playing nicely)
- Set clear attainable goals and limits (homework and bedtime routines, chores) and connect them to earning privileges, special outings etc.
- Use positive incentives and natural consequences: *When you..., then you may...*
- Empathy statements can be useful, such as *I understand*
- Adults should model emotional self-regulation and a balanced lifestyle (good eating and sleep habits, exercise and hobbies)
- Choices should be limited to two or three options

Environmental
- Structure and routine are essential. Parents/partners must be united, consistent, firm, fair and follow through
- Encourage prioritizing instead of procrastination
- Post visual reminders (rules, lists, sticky notes, calendars) in prominent locations
- Use timers/apps for reminders (homework, chores, limiting electronics, paying bills)
- Keep labeled, different coloured folders or containers in prominent locations for items (keys, electronics).
- Find the work area best suited to the individual (dining table, quiet area)
- Break down tasks
- Allow movement breaks
- Allow white noise (fan, background music) during homework or at bedtime

At School

Instructional
- Keep directions clear and precise
- Get student's attention before giving instructions
- Check understanding and provide clarification as needed
- Actively engage the student by providing work at the appropriate academic level

Behavioral
- Provide immediate and frequent feedback
- Use direct requests – *when...then*
- Visual cues for transitions
- Allow for acceptable opportunities for movement- "walking passes"

Environmental
- Preferential seating
- Quiet place for calming down

Accommodations
- Chunk and break down steps to initiate tasks
- Provide visual supports to instruction
- Reduce the amount of work required to show knowledge
- Allow extended time on tests and exams
- Provide note taker or access to assistive technology
- Supports can include the CADDRA psychoeducational and accommodations template
- Request school support services

At Work

Accommodations
- Identify accommodation needs
- Provide CADDRA workplace accommodations template

Counsel
- Suggest regular and frequent meetings with manager and support collaborative approach
- Set goals, learn to prioritize, review progress regularly
- Identify time management techniques that work for the client, e.g. using a planner, apps
- Declutter and create a work-friendly environment

Tools
- Organizational apps and/or productivity websites
  caddra.ca/medical-resources/psychosocial-information

Relationships

- Understand the impact ADHD can have on relationships with partners, family, friends, teachers, peers and co-workers.
- Recognize and accept ADHD can cause unintended friction and frustration between parent and child as well as between partners (e.g. difficulties with self-regulation, time management difficulties)
- Learn how to listen and communicate effectively
- Organize frequent time to communicate (don't just talk) to discuss goals and plans (what works, what doesn't) within home, educational and work environments
- Schedule regular fun with family, partner, friends
- Practice relaxation and mindfulness techniques
  caddra.ca/medical-resources/psychosocial-information
- Stay calm, be positive, recognize/validate and celebrate strengths!

Other referrals may be needed:

- Psychologist
- Tutor, Family Therapist
- Parenting Programs
- Social Skills Program
- Organizational Skill Course
- Occupational Therapist
- Speech and Language
- Audiologist
- Learning Strategist
- ADHD Coach
- Vocational Coach

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For further information, please refer to the Psychosocial Interventions and Treatments chapter, Canadian ADHD Practice Guidelines at caddra.ca

Version: October 2016

26

Myth??

•When medicating for ADHD, start with a low-dose, short acting stimulant

27

Medication Management

- **First-line treatments: methylphenidate or dexamphetamine**
  - Use long acting NOT short acting meds
  - Start at a low dose and titrate upwards
  - Consider method of administration (capsule or dissolvable) and duration of action
- **Second-line treatments: atomoxetine, guanfacine, clonidine**
  - Option for patients who do not tolerate or respond to first-line treatment – often an add-on to the stimulant
  - *Be sure that you have optimized first-line agents before commencing second-line treatments*

Challenge: Medication coverage is not equal across the country

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28

CADDRA Guide to ADHD Pharmacological Treatments in Canada - 2018

Medications available and illustrations	Characteristics	Duration of action [1]	Starting dose [2]	Dose titration as per product monograph	Dose titration as per CADDRA www.caddra.ca
AMPHETAMINE-BASED PSYCHOSTIMULANTS					
Dexedrine® tablets 5 mg **Dexedrine®** spansules: 10, 15 mg	Pill can be crushed [3] Spansule (not crushable)	~ 4 h ~ 6 - 8 h	Tablets = 2.5 to 5 mg BID Spansules = 10 mg q.d. a.m.	↑ 2.5 - 5 mg at weekly intervals; Max. dose/day: (q.d. or b.i.d.) All ages = 40 mg	↑ 2.5 - 5 mg/day at weekly intervals Max. dose/day: (q.d. or b.i.d.) Children and Adolescents = 20 - 30 mg Adults = 50 mg
Adderall XR® Capsules 5, 10, 15, 20, 25, 30 mg	Sprinkable Granules	~ 12 h	5 - 10 mg q.d. a.m.	↑ 5 - 10 mg at weekly intervals Max. dose/day: Children = 30 mg Adolescents and Adults = 20 - 30 mg	Children: ↑ 5 mg at weekly intervals Max. dose/day = 30 mg Adolescents and Adults: ↑ 5 mg at weekly intervals max. dose/day = 50 mg
Vyvanse® capsules 10, 20, 30, 40, 50, 60, 70* mg	Capsule content can be diluted in water, orange juice and yogurt	~ 13 - 14 h	20 - 30 mg q.d. a.m.	↑ by clinical discretion at weekly intervals Max. dose/day: All ages = 60 mg	↑ 10 mg at weekly intervals Max. dose/day: Children = 60mg Adolescents and Adults = 70 mg
METHYLPHENIDATE-BASED PSYCHOSTIMULANTS					
Methylphenidate short acting, tablets 5 mg (generic) 10, 20 mg (Ritalin®)	Pill can be crushed [3]	~ 3 - 4 h	5 mg b.i.d. to t.i.d. Adult = consider q.i.d.	↑ 5 - 10 mg at weekly intervals Max. dose/day: All ages = 60 mg	↑ 5 mg at weekly intervals Max. dose/day: Children and Adolescents = 60 mg Adults = 100 mg
Biphentin® Capsules 10, 15, 20, 30, 40, 50, 60, 80 mg	Sprinkable Granules	~ 10 - 12 h	10 - 20 mg q.d. a.m.	↑ 10 mg at weekly intervals Max. dose/day: Children and Adolescents = 60 mg Adults = 80 mg	↑ 5 - 10 mg at weekly intervals Max. dose/day: Children = 60 mg Adolescents and Adults = 80 mg
Concerta® Extended Release Tabs 18, 27, 36, 54 mg	Pill needs to swallowed whole to keep delivery mechanism intact	~ 12 h	18 mg q.d. a.m.	↑ 18 mg at weekly intervals Max. dose/day: Children = 54 mg Adolescents = 54 mg / Adults = 72 mg	↑ 9 - 18 mg at weekly intervals Max. dose/day: Children = 72 mg Adolescents = 90 mg / Adults = 108 mg
Foquest® Capsules 25, 35, 45, 55, 70, 85, 100 mg	Sprinkable Granules	~ 16 h	25 mg q.d. a.m.	↑ 10-15 mg in intervals of no less than 5 days Max. dose/day: Adults = 100 mg	↑ 10-15 mg in intervals of no less than 5 days Max. dose/day: Adults = 100 mg
NON PSYCHOSTIMULANT - SELECTIVE NOREPINEPHRINE REUPTAKE INHIBITOR					
Strattera® (Atomoxetine) Capsules 10, 18, 25, 40, 60, 80, 100 mg	Capsule needs to swallowed whole to reduce GI side effects	Up to 24 h	Children and Adolescents : 0.5 mg/kg/day Adults = 40 mg q.d. for 7-14 days	Maintain dose for a minimum of 7 - 14 days before adjusting: Children = 0.8 then 1.2 mg/kg/day 70 kg or Adults = 60 then 80 mg/day Max. dose/day : 1.4 mg/kg/day or 100 mg	Maintain dose for a minimum of 7 - 14 days before adjusting: Children = 0.8 then 1.2 mg/kg/day 70 kg or Adults = 60 then 80 mg/day Max. dose/day: 1.4 mg/kg/day or 100 mg
NON PSYCHOSTIMULANT - SELECTIVE ALPHA-2a ADRENERGIC RECEPTOR AGONIST					
Intuniv XR® (Guanfacine XR) Extended release tabs 1, 2, 3, 4 mg	Pills need to be swallowed whole to keep delivery mechanism intact	Up to 24 h	1 mg q.d. (morning or evening)	Maintain dose for a minimum of 7 days before adjusting by no more than 1 mg increment weekly Max. dose/day: Monotherapy: 6-12 years = 4 mg, 13-17 years = 7 mg As adjunctive therapy to psychostimulants 6-17 years = 4 mg	Maintain dose for a minimum of 7 days before adjusting by no more than 1 mg increment weekly Max. dose/day: Monotherapy: 6-12 years = 4 mg, 13-17 years = 7 mg As adjunctive therapy to psychostimulants 6-17 years = 4 mg

Note: Illustrations do not reflect real size of pills/capsules. For specific details on how to start, adjust and switch ADHD medications, clinicians are invited to refer to the Canadian ADHD Practice Guidelines (www.caddra.ca)
[1] Pharmacokinetics and pharmacodynamic response vary from individual to individual. The clinician must use clinical judgement as to the duration of efficacy and not solely rely on reported values for PK and duration of effect.
[2] Starting doses are from product monographs. CADDRA recommends generally starting with the lowest dose available. [3] Higher abuse potential. * Vyvanse 70 mg is an off-label dosage for ADHD treatment in Canada.
Document developed by Annick Vincent MD (www.attentiondeficit-info.com) and Direction des communications et de la philanthropie, Laval University, with the special collaboration of CADDRA.

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Version : February 2018

29

Myth??

- ADHD medications are dangerous and have lots of cardiac risks! Only specialists should prescribe them.

30

Side Effects

- **Loss of appetite** – eat breakfast!
- **Insomnia** – usually settles with good sleep hygiene and avoidance of 'screens' in the hour before bed
- **Headaches** – transient – simple analgesics and hydration are helpful
- **Mood/anxiety** – will respond to a change in medication if due to medication

Contrary to popular belief, cardiac effects are minimal – equivalent to running up a flight of stairs. There is no need for an EKG or cardiac workup unless there is a family history of sudden cardiac death in the young or known serious heart disease.

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31

Myth??

•ADHD medications increase the risk of drug abuse.

32

ADHD & Substance Use/Diversion

- **Substance Abuse increases if ADHD is comorbid with *Early Cigarette Smoking***
- **Substance Abuse is *less* if ADHD is treated from an early age**
- **Diversion is a risk with *short-acting* meds**

33

Myth??

•Therapeutic drug holidays are recommended during school, holiday or weekend breaks.

34

Myth??

Other effective treatments include:

- neurofeedback
- cognitive training
- food supplements
- omega 3/6 fatty acids
- avoiding sugar & red food dye

35

Take-home Messages

- Despite common belief, ADHD is *underdiagnosed*
- Effective management of ADHD includes:
  - ✓ Education
  - ✓ Parent/patient counseling
  - ✓ Behavioural, psychosocial, and pharmacological treatments
- Long-acting stimulants are recommended as first-line therapy
- Monitoring and optimization of medication is important throughout the lifespan
- Remain vigilant for the presence of co-morbidities which may emerge over time, and consider referral to a specialist if you're stuck

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36

You **can** manage ADHD in Primary Care and markedly improve the lives of your patients with ADHD – treatment of ADHD is truly life changing!

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37

Resources

www.caddra.ca – Please become a member! Our annual meetings: Toronto, 2019 & St. John's, 2020

www.caddac.ca – great info for patients, families and schools

www.totallyADD.com – fun and interactive site for adults

38