THE COMORBIDITY CHALLENGE! TREATING ADHD IN ADULTS WITH ADDICTIONS

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WHO IS DR. AYAS?

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FACULTY/PRESENTER DISCLOSURE

- **Relationships with commercial interests:**
  - **Grants/Research Support:** *None*
  - **Speakers Bureau/Advisory Boards Honoraria:** *Allergan, Lundbeck, BMO-Otsuka, Shire/Takeda, and Janssen.*
  - **Consulting Fees:** *Independent Medical Examiner Imperial Oil and McLeod Law LLP.*

- *Potential Conflict(s) of Interest*
  - *I have not received financial payment for this presentation.*

OBJECTIVES

- *Understand the definition, prevalence and impact of ADHD*
- *Utilize guideline recommendations for the selection and monitoring of ADHD pharmacotherapy.*
- *Identify the connection between ADHD and Substance Use.*
- *Discuss a case study pertaining to ADHD and substance use disorder.*
- *Provide clinical pearls for the management of ADHD.*

NEUROBIOLOGY OF ADHD

DSM 5 CRITERIA

A. *A persistent pattern of inattention and/or impulsivity/hyperactivity that interfere with functioning or development*
B. *Several inattentive or hyperactive-impulsive symptoms were present before age 12 years.*
C. *Several symptoms are present in two or more setting, (e.g., at home, school or work; with friends or relatives; in other activities).*
D. *There is clear evidence that the symptoms interfere with, or reduce the quality of, social, school, or work functioning.*
E. *The symptoms do not happen only during the course of schizophrenia or another psychotic disorder. The symptoms are not better explained by another mental disorder (e.g. Mood Disorder, Anxiety Disorder, Dissociative Disorder, or a Personality Disorder).*

American Psychiatric Association: Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition, DSM 5. Washington, DC, American Psychiatric Association, 2013

INATTENTION

FIVE OR MORE FOR ADOLESCENTS 17 AND OLDER AND ADULTS; SYMPTOMS OF INATTENTION HAVE BEEN PRESENT FOR AT LEAST 6 MONTHS, AND THEY ARE INAPPROPRIATE FOR DEVELOPMENTAL LEVEL:

- *Often fails to give close attention to details or makes careless mistakes in schoolwork, at work, or with other activities.*
- *Often has trouble holding attention on tasks or play activities.*
- *Often does not seem to listen when spoken to directly.*
- *Often does not follow through on instructions and fails to finish schoolwork, chores, or duties in the workplace (e.g., loses focus, side-tracked).*
- *Often has trouble organizing tasks and activities.*
- *Often avoids, dislikes, or is reluctant to do tasks that require mental effort over a long period of time (such as schoolwork or homework).*
- *Often loses things necessary for tasks and activities (e.g. school materials, pencils, books, tools, wallets, keys, paperwork, eyeglasses, mobile telephones).*
- *Is often easily distracted*
- *Is often forgetful in daily activities.*

American Psychiatric Association: Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition, DSM 5. Washington, DC, American Psychiatric Association, 2013

INATTENTION IN ADULTS

Overlooks or misses details, work is inaccurate
Mind seems elsewhere
Fails to finish duties at work, is easily sidetracked
Poor time management, fails to meet deadlines
Loses wallet, keys, mobile phone

American Psychiatric Association: Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition, DSM 5, Washington, DC, American Psychiatric Association, 2013

HYPERACTIVITY AND IMPULSIVITY

FIVE OR MORE FOR ADOLESCENTS 17 AND OLDER AND ADULTS; SYMPTOMS OF HYPERACTIVITY-IMPULSIVITY HAVE BEEN PRESENT FOR AT LEAST 6 MONTHS TO AN EXTENT THAT IS DISRUPTIVE AND INAPPROPRIATE FOR THE PERSON'S DEVELOPMENTAL LEVEL

- *Often fidgets with or taps hands or feet, or squirms in seat.*
- *Often leaves seat in situations when remaining seated is expected.*
- *Often runs about or climbs in situations where it is not appropriate (adolescents or adults may be limited to feeling restless).*
- *Often unable to play or take part in leisure activities quietly.*
- *Is often "on the go" acting as if "driven by a motor".*
- *Often talks excessively.*
- *Often blurts out an answer before a question has been completed.*
- *Often has trouble waiting his/her turn.*
- *Often interrupts or intrudes on others (e.g., butts into conversations or games)*

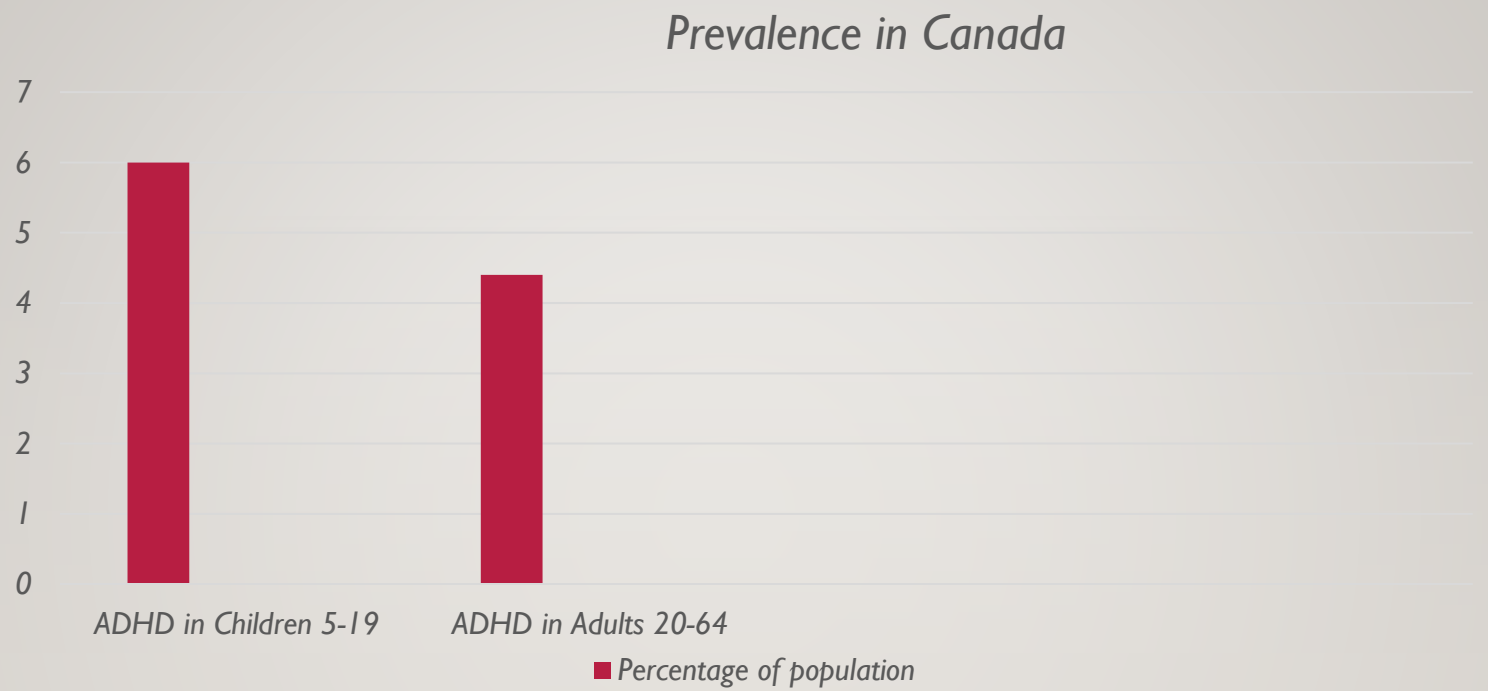
American Psychiatric Association: Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition, DSM 5. Washington, DC, American Psychiatric Association, 2013

HYPERACTIVITY/IMPULSIVITY IN ADULTS

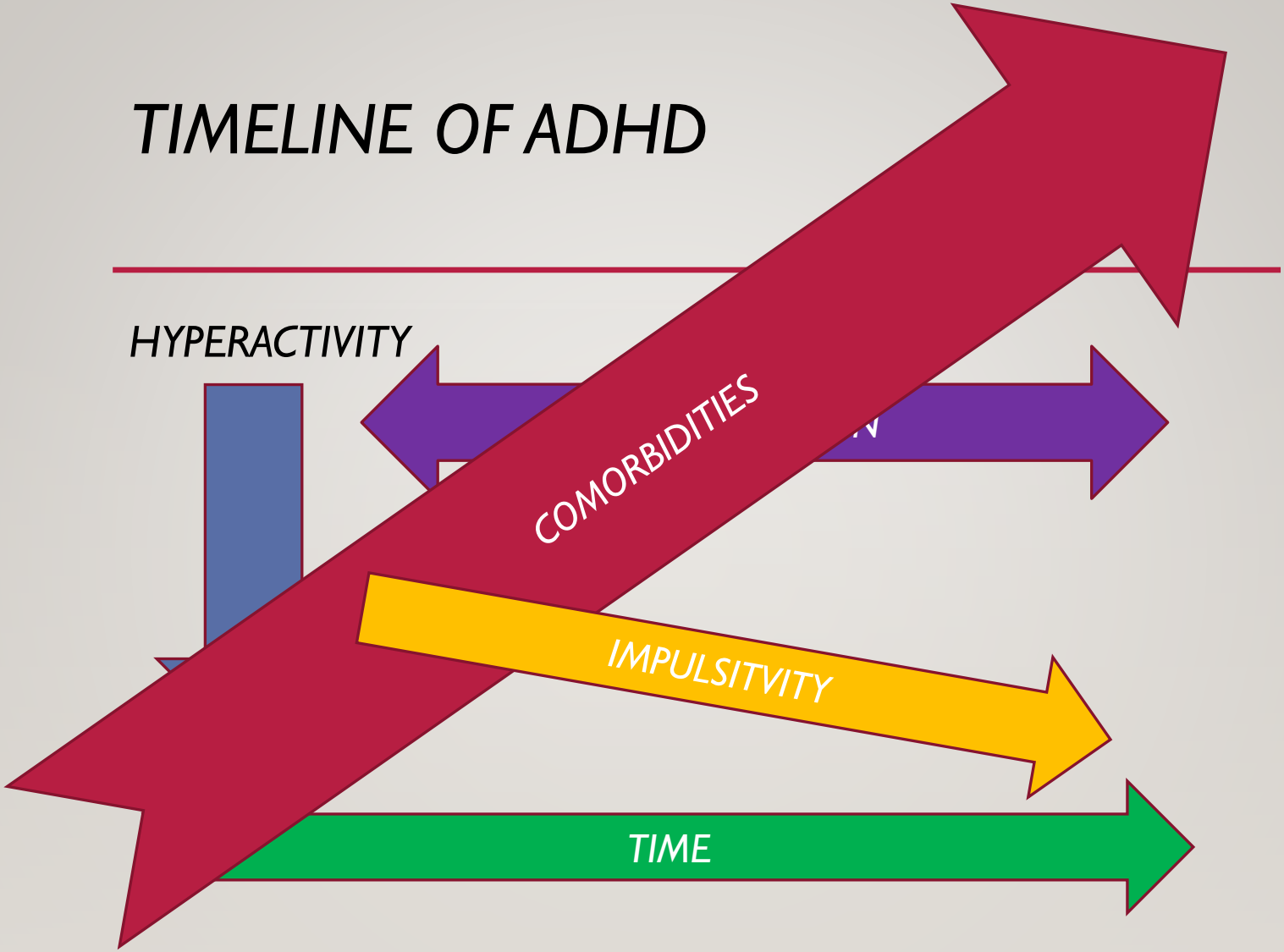
Leaves seat in the office or other workplace
Feeling restless
Unable to engage in leisure activities quietly
Unable to be still for an extended period of time (e.g., in restaurants, meetings)
Cannot wait for turn in conversation

American Psychiatric Association: Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition, DSM 5, Washington, DC, American Psychiatric Association, 2013

Kessler RC et al. Am J Psychiatry 2006;



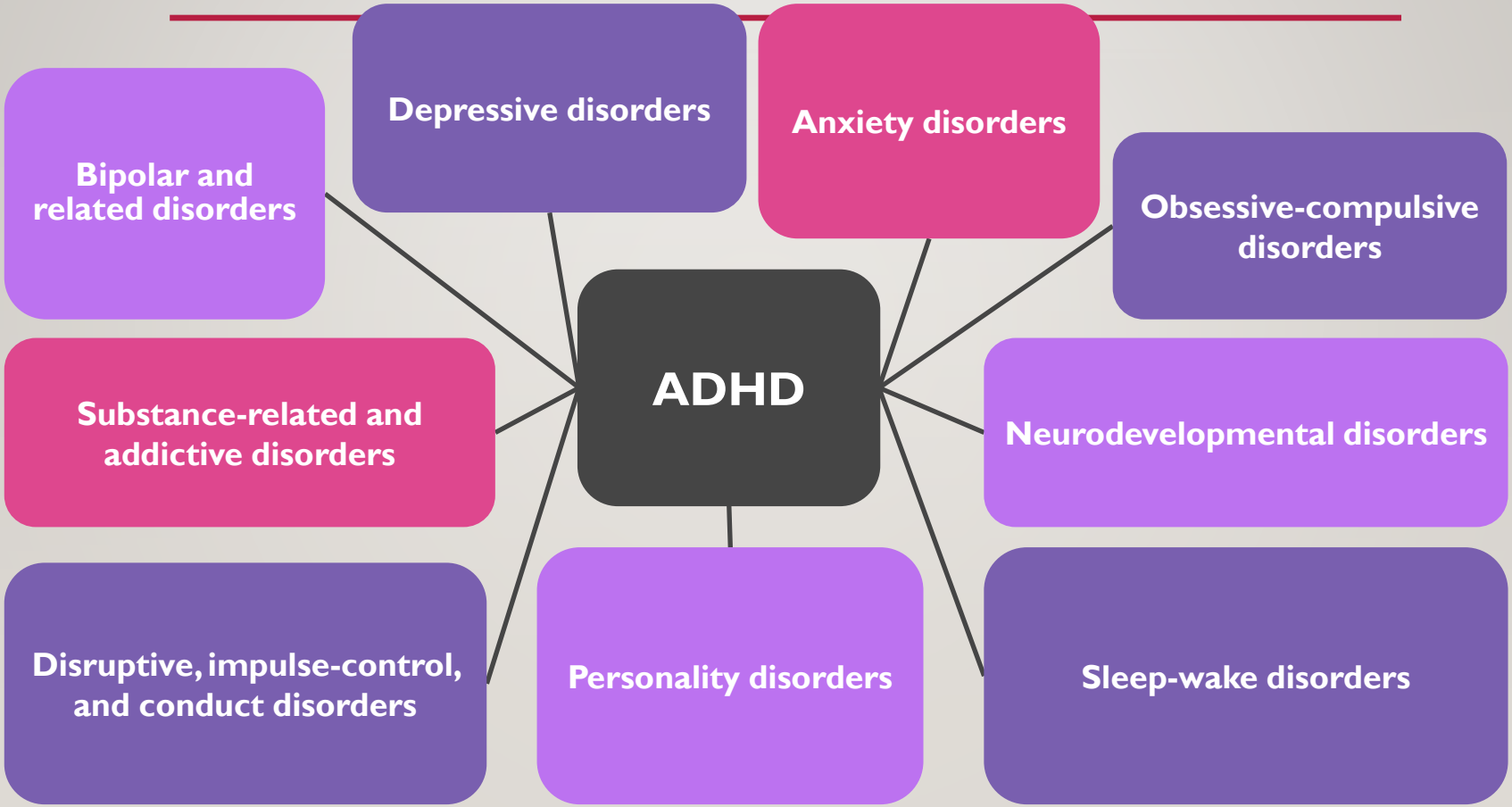
TIMELINE OF ADHD



Biederman J, et al. Am J Psych. 1993;150(12):1792-1798.

COMMON COMORBIDITIES

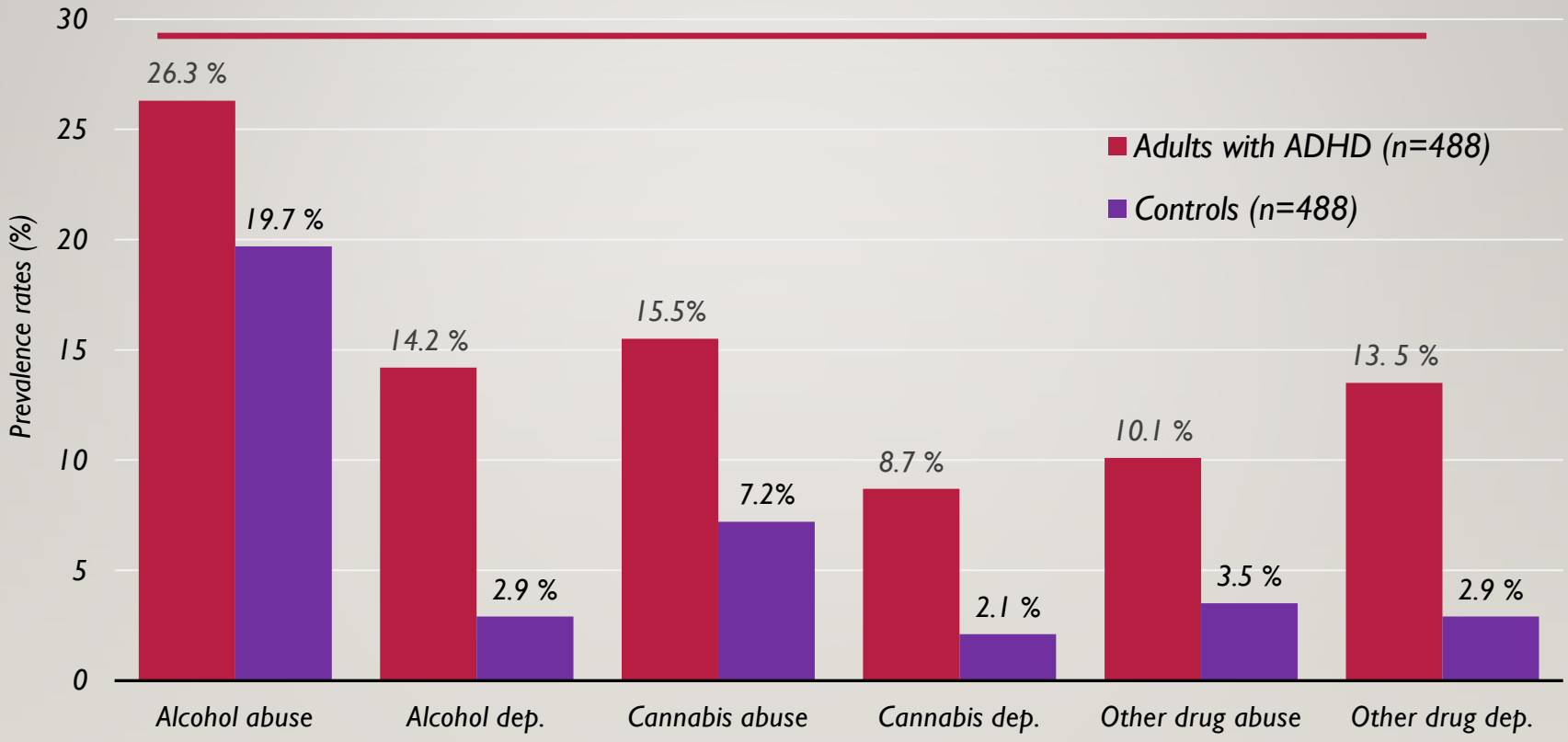
85% of adults with ADHD will have one or more comorbid condition[1]



1. Camyn et al. Can J Psychiatry 2009;54:673-83; 2. Adapted from Kooij et al. J Atten Disord 2012;16:3S-19S; 3. American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders (DSM-5), 2013

CCHS-MH 2012: PREVALENCE OF SUBSTANCE USE DISORDER AMONG CANADIAN ADULTS WITH ADHD

Lifetime prevalence of psychiatric diagnoses: substance use



Difference between ADHD and control groups statistically significant for all

CCHS-MH = Canadian Community Health Survey-Mental Health; dep = dependence

Hesson, Fowler. J Atten Disord 2015;doi:10.1177/1087054715573992

ETIOLOGY OF ADHD AND ADDICTIONS

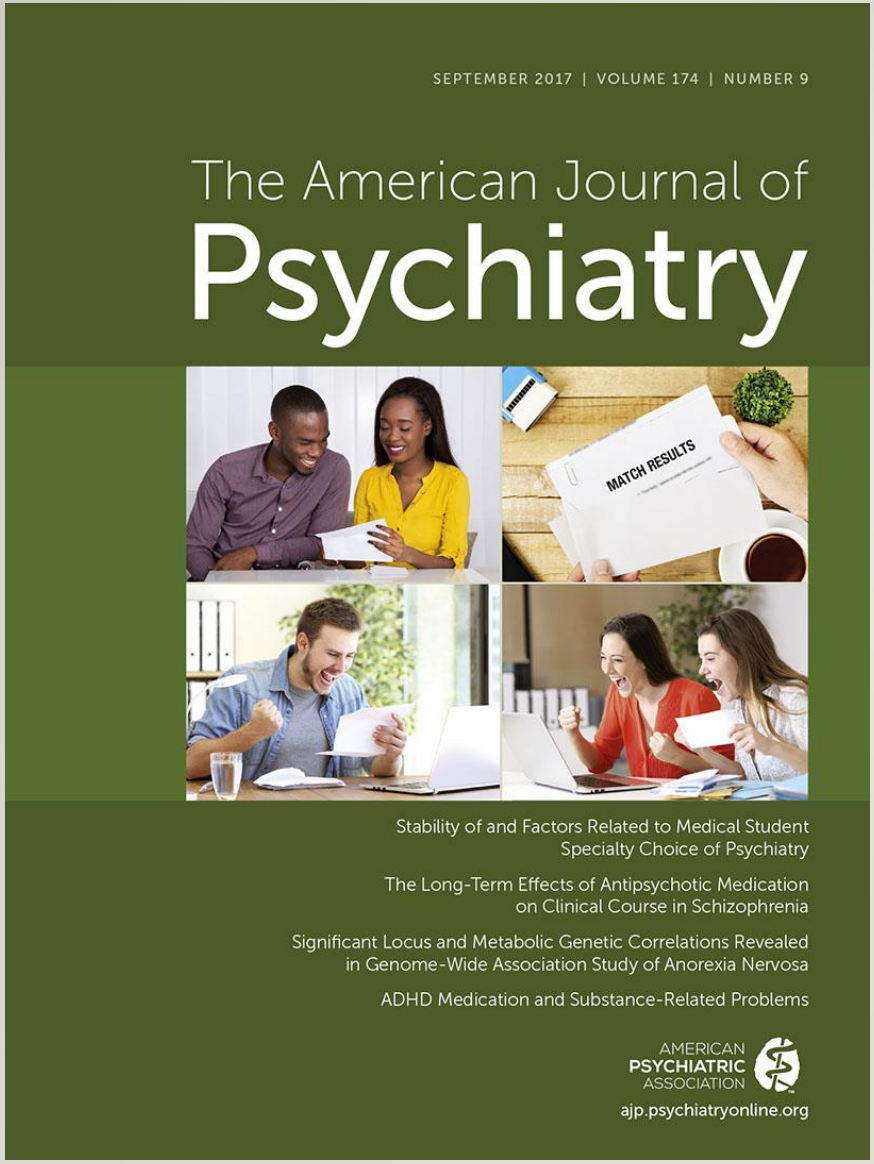
- *Need for rapid feedback*
- *Desire for immediate reward*
- *High adrenaline risk seeking behaviors*
- *Patients with ADHD may use illicit substances to self-medicate, also to develop peer relationships due to poor self esteem*
  - *However, the poor self-judgement and impulsivity associated with ADHD may be conducive to the development of SUDs*
- *It is important to dispel patient beliefs that the use of illicit substances has a positive therapeutic benefit*
  - *Marijuana smoking (to calm themselves or facilitate sleep) is common in patients with ADHD*
    - *Marijuana may be laced with dangerous substances*
    - *Cannabis impairs cognition and creates amotivational states*
    - *Reduces productivity and functioning.*

SUD = substance use disorder

Canadian ADHD Practice Guidelines, 4.1 Ed, (2020). Available at: www.caddra.ca

DIAGNOSTIC CONUNDRUM

- *SUD may increase the severity of ADHD symptoms.*
- *Patients with SUD may present with attention, behavior, and self-control symptoms that can mimic ADHD.*
- *A referral to a specialist may be required before establishing and ADHD diagnosis if a patient is actively using substances.*



PIVOTAL RECENT STUDY

3 million healthcare claims from 2005-2014 from adolescent and adult ADHD patients

Treatment with ADHD medication was associated with lower risk of SRE in men/women; and lower long term risk of future SRE (especially for men)

COMORBID ADHD AND SUDS: TREATMENT CONSIDERATIONS

- *Concurrent treatment is recommended, however sequential treatment of the addiction first can be considered if severe.*
- *Options can include day treatment if an absence of severe medical or psychiatric comorbidities, stable psychosocial environment, recent onset, and highly motivated. Consider residential treatment if concerned about any of the former criteria.*
- *ADHD and SUD related craving share neurobiological similarities, hence treatment of ADHD may reduce cravings for substances.*
- *Early stimulant treatment reduces or delays the onset of SUDs into adolescence.*

CBT = cognitive behaviour therapy; SUD = substance use disorder
Canadian ADHD Practice Guidelines, Ed. 4.1 2020. Available at: www.caddra.ca

RISK OF DIVERSION OR ADDICTION

- *Patients with ADHD + conduct disorder + SUD are at highest risk for diversion and misuse of ADHD medications*
- *Prescription stimulants have less abuse potential than cocaine or methamphetamine due to slower dissociation from the site of action, slower uptake into the striatum, and slower binding/dissociation with the dopamine transporter protein.*
- *Non stimulants such as Atomoxetine and Guanfacine XR do not have abuse potential.*
- *Long-acting stimulants have less potential for injection/snorting than immediate release preparations*

PSYCHOSOCIAL INTERVENTIONS BUILDING SKILLS

Psychoeducation

Empower the patient/family with knowledge about the disorder.

Behavioral Interventions

Use of rewards, consequences, environmental management, ADHD coaching, lifestyle changes.

Social Interventions

Social skills training, anger management, supervised recreation and parent training.

Psychotherapy

Self-talk, cognitive therapy, dialectical behavioral therapy, interpersonal therapy and family therapy

Educational/Vocational Accommodation

Academic remediation, specialized educational placements, workplace interventions

Canadian ADHD Resource Alliance (CADDRA). Canadian ADHD Practice Guidelines, 4th Edition, Toronto, ON: CADDRA, 2018.

FIRST LINE MEDICATIONS FOR TREATMENT OF ADULT ADHD

Brand Name	Starting dose	Dosage form	Titration Schedule every 7 days – product	CADDRA Titration Schedule every 7 days	Total Maximum Daily Dose Product	CADDRA Maximum Dose	Duration of Efficacy (hours)
Adderall XR (Amphetamine mixed salts)	*10 mg po qam*	*5, 10, 15, 20, 25, 30 mg cap*	*Increase by 10 mg*	*Increase by 5 mg*	*20-30 mg*	*50 mg*	*10-12*
Biphentin (methylphenidate)	*10-20 mg po qam*	*10, 15, 20, 30, 40, 50, 60, 80 mg cap*	*Increase by 10 mg*	*Increase by 5-10 mg*	*80 mg*	*80 mg*	*10-12*
Concerta (methylphenidate)	*18 mg po qam*	*18, 27, 36, 54 mg tab*	*Increase by 18 mg*	*Increase by 9-18 mg*	*72 mg*	*108 mg*	*10-12*
Vyvanse (lisdexamfetamine)	*20-30 mg po qam*	*10, 20, 30, 40, 50, 60, 70 mg cap*	*Clinical Discretion*	*Increase by 10 mg*	*60 mg*	*70 mg*	*13-14*
Foquest (methylphenidate HCL)	*25 mg po qam*	*25, 35, 45, 55, 70, 85, 100*	*Increase by 10 or 15 mg*	*Increase by 10 or 15 mg*	*100 mg*	*100 mg*	*16*

Canadian ADHD Resource Alliance (CADDRA). Canadian ADHD Practice Guidelines, 4t.l Edition, Toronto, ON; CADDRA, 2020.

SECOND LINE/ADJUNCTIVE AGENTS- INDICATIONS FOR USE:
A) P.R.N. FOR CERTAIN ACTIVITIES;
B) TO AUGMENT LONG-ACTING FORMULATIONS EARLY OR LATE IN THE DAY, OR EARLY IN THE EVENING
C) WHEN LONG ACTING AGENTS ARE COST PROHIBITIVE

Brand Name	Starting dose	Dosage form	Titration Schedule every 7 days	CADDRA Titration Schedule every 7 days	Total Maximum Daily Dose	CADDRA Maximum Dose
Dexedrine (dextro-amphetamine)	*2.5-5 mg po bid*	*5 mg tab*	*Increase by 5 mg*	*Increase by 2.5 to 5 mg*	*40 mg*	*50 mg*
Dexedrine Spansule (detro-amphetamine)	*10 mg po qam*	*10, 15 mg cap*	*Increase by 5 mg*	*Increase by 2.5 to 5 mg*	*40 mg*	*50 mg*
Ritalin (methylphenidate)	*5 mg po bid to tid, consider qid*	*10, 20 mg tab (5 mg generic only)*	*Increase by 5-10 mg*	*Increase by 5 mg*	*60 mg*	*100 mg*
Ritalin SR (methylphenidate)	*20 mg po qam*	*20 mg tab*	*Increase by 20 mg (add 2 PM dose)*	*Increase by 20 mg (add 2 PM dose)*	*60 mg*	*100 mg*
Strattera (Atomexetine) Monotherapy but off label adjunctive	*40 mg po qdaily*	*10, 18, 25, 40, 60, 80, 100 mg cap*	*Adjust every 7 to 14 days to 60 mg than to 80 mg*	*Lesser of 1.4mg/kg/day or 100 mg/day*	*100 mg*	*100 mg*

Canadian ADHD Resource Alliance (CADDRA). Canadian ADHD Practice Guidelines, 4t.l Edition, Toronto, ON; CADDRA, 2020.

CONTRAINDICATIONS TO STIMULANT USE

- *Known hypersensitivity or allergy to the products*
- *Moderate to severe hypertension*
- *Glaucoma (narrow angle)*
- *Symptomatic cardiovascular disease*
- *History of mania or psychosis (caveat for Bipolar disorder)*
- *Pheochromocytoma, untreated hyperthyroidism.*
- *Recent treatment with MAOI*
- *Precaution in pregnancy and lactation.*
- *Precaution in substance use disorders.*

Canadian ADHD Resource Alliance (CADDRA). Canadian ADHD Practice Guidelines, 4t. l Edition, Toronto, ON; CADDRA, 2020.

CASE STUDY

CASE STUDY

- *30 y/o Caucasian female.*
- *Referred by outpatient shared care family doctor/psychiatrist in Edmonton to the concurrent disorder unit at CCMHA.*
- *Crystal methampetamine use disorder and Major depressive disorder on history.*

CASE STUDY

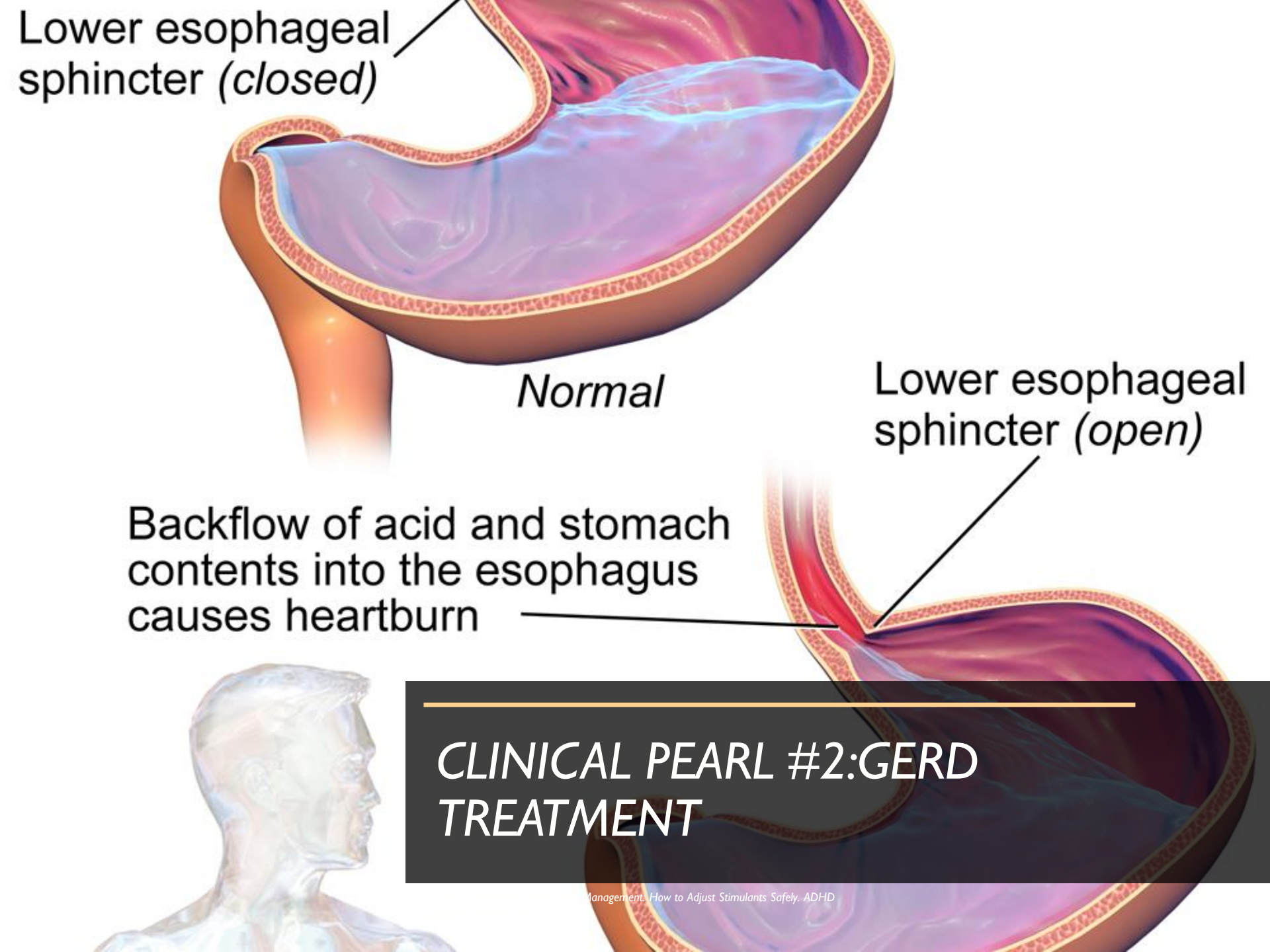
- *Academic History and Occupational History*
- *Developmental History*
- *Medical History*
- *Psychiatric History*
- *Forensic History*
- *Substance Abuse History*
- *Family History*
- *Relationship History*

CASE STUDY

- *Could not tolerate group therapy. Tried to do boardwork, felt frustrated and left early. Negative interactions with peer, seen as 'brash, loud, and pushy' by co-patients. Considering discharge.*
- *ADHD ASRS conducted. Suggestive of ADHD.*
- *Vyvanse initiated at 10 mg after one month of sobriety.*
- *Titrated up by 10 mg increments to 50 mg qam by discharge. Trazodone sleep aide also initiated, titrated up to 100 mg qhs.*
- *Client interactions and group work drastically changed by the second week of titration of the stimulant. Completed the program and continues to be sober one year later. Has returned to the Centre to give motivational presentations to current patients.*

CLINICAL PEARL #1: DOSING ALGORITHM

Dodson, W ADHD Medication Management: How to Adjust Stimulants Safely. ADHD Experts Podcast 2016-07-12



CLINICAL PEARL #2:GERD TREATMENT

CLINICAL PEARL #3:CITRIC ACID/ASCORBIC ACID

Dodson, W ADHD Medication Management: How to Adjust Stimulants Safely. ADHD Experts Podcast 2016-07-12

CLINICAL PEARL #4: MEDICATION HOLIDAYS?

Dodson, W ADHD Medication Management: How to Adjust Stimulants Safely. ADHD Experts Podcast 2016-07-12

CLINICAL PEARL #5 ALTERNATIVE THERAPIES?

- *Neurofeedback*
- *Dietary restriction*
- *Dietary supplements*
- *Chiropractic care*

QUESTIONS, COMMENTS?