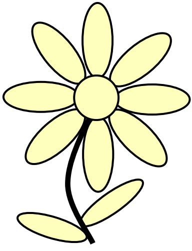

ADHD

Identification and management for Canadian primary care professionals

Compiled by

Peter M. Kondra, MSc, MD, FRCPC,
and Brenda Mills, C&Y MHC
Hamilton Family Health Team
Child & Youth Mental Health Initiative

in collaboration with

Helen R. Spenser MD, CCFP, FRCPC,
Children's Hospital of Eastern Ontario, Ottawa, Ontario

and Blair Ritchie MD, FRCPC,
Alberta Health Services, University of Calgary

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Hamilton Family Health Team
Better care, together.

Attention Deficit Hyperactivity Disorder

Understanding ADHD in Primary Care

Visit 1 — History and Information Gathering

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Visit 2 — Medical and Physical Exam

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Visit 3 — Education

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Visit 4 — Treatment Plan

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- Parenting Strategies
- Social skills and behavior interventions
- Academic Interventions
- Medications

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Follow Up and Referral

Online Comprehensive Guides and References

Understanding ADHD in Primary Care

- Epidemiology
- ADHD Treatment: General Principles

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Epidemiology

- Most frequently occurring worldwide psychiatric disorder of childhood affecting 5-12% of school-aged children (Faraone et al, 2003)
- Male to female ratio 2:1 (Szatmari et al., 1989)
- Chronic condition – over 60% will continue to have ADHD as adults (Weiss & Hechtman, 1993)
- 80% of ADHD cases are comorbid with Oppositional Defiant, Anxiety, Learning, Mood, Conduct, Developmental, Autism Spectrum and Tourette's Disorders (Biederman et al., 1999)

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ADHD Treatment: General Principles 1

- Successful treatment of ADHD begins with comprehensive assessment which includes a history of the onset and course of problem, gathering collateral reports from school and caregivers, as well as use of screening tools (e.g., SNAP 90) to explore co-morbid conditions

- Ensure that DSM diagnostic criteria for ADHD are met with emphasis on (a) diagnostic information from parent and teacher/caregiver involving more than one setting, and (b) ruling out other causes or diagnoses such as mood disorder, anxiety disorder, oppositional defiant disorder/conduct disorder, learning disability, neurodevelopmental and physical (e.g., sleep apnea) disorders

- Significant symptom overlap exists between Bipolar Disorders and ADHD, however an essential difference is the chronicity of ADHD symptoms compared to the episodic nature of Bipolar Disorders

- Rule out: Significant trauma or major life changes – emotional, physical or sexual abuse, parental separation, bullying and assaults – or medications and/or illicit drugs (e.g., cannabis) as cause of behavioural change

ADHD Treatment: General Principles 2

- ADHD has very high genetic transmission rate (Faraone, 2000), therefore parents and siblings are frequently symptomatic
- Risk factors: Parent with ADHD; maternal alcohol, drug, cigarette use (Mick, 2002); as well as prematurity and perinatal complications
- Diet (sugar, additives) does NOT cause ADHD
- ADHD caused by dysfunctional neurotransmission of dopamine and norepinephrine in frontostriatal and dorsal anterior cingulate brain cortex (Bymaster, 2002)

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ADHD Treatment: General Principles 3

- Mechanism of action: Medications used to treat ADHD facilitate synaptic neurotransmission in the frontostriatal and dorsal anterior cingulate cortex

- Multimodal or combined treatment of ADHD with medication and cognitive/behavioural interventions produces the most robust treatment response (MTA Cooperative Group, 1999)

- Medication treatment **alone without** home and school rating scales to monitor treatment response with worst outcome - no better than placebo group (MTA Cooperative Group, 1999)

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Visit 1: History and Information Gathering

- ADHD Screening Questions
- ADHD Tools
- Assess functional impairment
- Assess for co-morbidity
- Screen for high-risk behaviours
- Safety assessment and planning

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ADHD Screening Questions

Please refer to DSM-5 for criteria of ADHD.

Introductory Questions

- What grade are you in? How is school?
- What subject do you like best? Why?
- What subject is hardest? Why?
- How is most school work (difficult, hard)? What grades are you getting?
- Are you achieving up to your potential?
- Have you ever repeated a grade?

ADHD-Related Questions

- Is it easy or hard to pay attention?
- Is it hard to listen to the teacher's lesson?
- Is it hard to pay attention to your parents?
- Do you daydream a lot in school?
- Are you easily distracted? Restless?
- Is it hard to wait your turn? Do you forget to put up your hand? Do you interrupt the teacher?
- Do you dislike doing anything that requires concentration?
- Do you avoid doing school & homework?
- Are your school papers disorganized?
- Do you often lose or forget things?
- Do you often forget to do what your parents ask?

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ADHD Tools

Public Domain ADHD Diagnostic and Screening Tools:

- SNAP 18 – monitoring treatment response ADHD only
- SNAP 26 – monitoring treatment response ADHD and ODD
- SNAP 30 – monitoring treatment response ADHD and side effects
- SNAP 90 – assessment of ADHD and co-morbid disorders
- ASRS v1 – assessment of adult ADHD
- ADHD Rating Scales - SNAP 30 & 90, ASRS v1 free online report automatically sent to clinician

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Assess functional impairment

- Patients **must** have clinically significant impairment to meet diagnostic criteria so assessing severity of symptoms is **essential** but often overlooked

- Explore the impact of the behaviour problems on family and peer relationship using questions such as:
  - How do you get along with others at school and/or home?
  - Have you ever had a detention or been suspended at school?
  - Do you have problems getting ready for bed or school?

- Weiss Functional Impairment Rating Scale (WFIRS) Self and Parent

- Teen Functional Assessment (TeFA) Self

- ASRS v1 – Adult scale

Functional impairment scales guide treatment planning!

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Assess for co-morbidity

Screen for other mental health problems (ADHD alone only 20%):

- Oppositional Defiant Disorder 50%
- Anxiety Disorders 30%
- Learning Disorders 28%
- Mood Disorders 25% (Biederman et al., 1999 and MTA Co-operative Group, 1999)
- Conduct Disorders 15%
- Substance Use Disorder
- Trauma or bullying
- Significant negative life events (parental separation, death of loved one including pet)

Public domain tools for assessing comorbid mental illness

- SNAP 90

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Screen for High-Risk Behaviours

Check at initial visit; if any positive, consider referral for specific issue endorsed & follow up at each visit

- Fire play and fire setting: Consider referral to fire-setting risk programs
- Running away: Parents contact child welfare authorities
- Aggression and criminal activity: Parents contact police youth officer to meet with youth and family
- Substance use: Referral to specific substance abuse treatment program
- Public domain suicide risk screening tool: TASR-AM – may need emergency assessment or referral to mental health agency
- For handout for youth about suicide from the GLAD-PC (Guidelines for Adolescent Depression – Primary Care) toolkit, click here

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Safety Assessment and Planning

- **Check in about safety at each visit.**
- **Develop and implement a safety plan when there is a risk of self-harm, harm to others, or suicide.** Click here for a guide on developing and implementing a safety plan from "Mental Health in the Primary Care Setting: Addressing the Concerns of Children and Youth, 2nd edition, a Desk Reference".
- **If there are any safety concerns, you can arrange to have the person assessed in the closest emergency department. The options available to have someone assessed vary from province to province. Common options include (1) a physician certifying a patient in their office, (2) the police bringing a patient into hospital, or (3) the family seeking an order from a Justice of the Peace to have an assessment completed. Please check your provincial Mental Health Act to determine what options are available in your province.**

... continued next page

- 15-20% of teenagers report suicidal ideation

- 5% attempt suicide

- More attempts in females and more completions in males

- Asking about suicidal ideation does not increase suicidal ideation or suicides

- Free domain suicide risk screening tool: TASR-AM

- Click here for a handout for youth about suicide from the GLAD-PC (Guidelines for Adolescent Depression – Primary Care) toolkit

- For more information on SSRIs and suicidal ideation, see treatment section

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Visit 2: Medical and Physical Exam

- Medical, Physical Investigations
- Other Medical Conditions
- Review information: school records and rating scales to:
  - confirm diagnoses
  - determine co-morbid diagnoses
- Stimulant Screen
- Atomoxetine (Strattera) Screen

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Medical, Physical Investigations

- Any mental health presentation perform **review of systems, complete physical exam**, and **screening bloodwork if indicated.**

- Baseline height and weight on growth chart

Consider:

- Anemia (CBC and differential)
- Diabetes (fasting glucose)
- Infection (CBC and differential, monospot, STIs)
- Thyroid (TSH)
- Chronic illness (liver & kidney function, electrolytes)
- Medications (over the counter, alternative, and prescribed)
- Malnutrition (Vitamin B12, Folate, Vitamin D)

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Other Medical Conditions

Often other medical conditions are present or may present with some of the symptoms of ADHD:

- Seizure Disorder (EEG)
- Auditory – Hearing test, Central auditory processing test
- Genetic – Fragile X, (Chromosomal analysis)
- Congenital – Fetal alcohol, heavy metal exposure
- Less frequent conditions like cancer

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Cardiac Screen

Appendix 2

Screening tool for the identification of potential cardiac risk factors for sudden death among children starting stimulant medication

Answering "yes" to any of these items should prompt further investigation or review by a specialist in paediatric cardiology

History	Yes	no
Shortness of breath with exercise (more than other children of the same age) in the absence of an alternative explanation (eg, asthma, sedentary lifestyle, obesity)		
Poor exercise tolerance (in comparison with other children) in the absence of an alternative explanation (eg, asthma, sedentary lifestyle, obesity)		
Fainting or seizures with exercise, startle or fright		
Palpitations brought on by exercise		
Family history of sudden or unexplained death including sudden infant death syndrome, unexplained drowning or unexplained motor vehicle accidents (in first- or second-degree relatives)		
Personal or family history (in first- or second-degree relatives) of nonischemic heart disease	**Yes**	**no**
Long QT syndrome or other familial arrhythmias		
Wolff-Parkinson-White syndrome		
Cardiomyopathy		
Heart transplant		
Pulmonary hypertension		
Unexplained motor vehicle collisions or drowning		
Implantable defibrillator		
Physical examination	**Yes**	**no**
Hypertension		
Organic (not functional) murmur present		
Sternotomy incision		
Other abnormal cardiac findings		

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(Belanger et al., 2009)

Atomoxetine (Strattera) Screen

- Ensure no contraindication such as hepatic dysfunction
- Review past history of any suicidal ideation and plans
- Document in chart that you have warned about these possible side effects of hepatotoxicity and onset/exacerbation of suicidal ideation

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Visit 3: Education

- Recommended treatment plan for ADHD
- Resources for parents
- Risks of not treating ADHD
- Treatment of co-morbid Oppositional Defiant Disorder and temper issues

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Resources for Parents

Patient Handout:

- ADHD – What's That?

- http://kidshealth.org/teen/diseases_conditions/learning/adhd.html - helping teens to understand ADHD

Books:

- "Taking Charge of ADHD: The Complete Authoritative Guide for Parents" by Russell Barkley

- "Making the System Work for Your Child with ADHD" by Peter Jensen

- "Driven to Distraction: Recognizing and Coping with Attention Deficit Disorder from Childhood Through Adulthood" by Edward Hallowell and John Ratey

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Resources for Parents

Websites

- http://www.help4adhd.org: Site to inform parents, children, youth professionals about ADHD and related topics
- http://www.chadd.org - CHADD (Children and Adults with Attention-Deficit/Hyperactivity Disorder): ADHD support for individuals, parents, teachers, professionals, and others
- http://www.nimh.nih.gov - National Institute of Mental Health: An overview of various child and youth mental health issues and effective treatment approaches

Videos

- http://www.totallyadd.com
- http://www.aacap.org/cs/adhd_a_guide_for_families/adhd_a_guide_for_families_video

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Risks of NOT Treating ADHD

Long-term follow-up studies comparing ADHD youth who were UNTREATED compared to controls revealed INCREASED:

- Teen pregnancies
- Substance abuse
- High school dropout
- Criminal charges
- Motor vehicle tickets
- Driver's license suspensions
- Employment dismissal

(Barkley, 2002)

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Treatment of Co-morbid Oppositional Defiant Disorder and Temper Issues

- Stimulants used to treat ADHD also have research-demonstrated efficacy in treating symptoms of ODD as well as impulsive temper outbursts

- When medications are wearing off, individuals can be irritable or tearful; long-acting formulations (Concerta (no substitution) or Vyvanse) significantly reduce this adverse effect

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Visit 4: Treatment Plan

- Parenting Strategies
- Social Skills Training
- Academic Interventions
- Alternative approaches
- Medications

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Parenting Strategies

- What Can Be Done at Home
- Parent training (COPE, Triple "P", Incredible Years, 123 Magic, etc.)
- **When** you finish... (homework/task), **then** you can have specified time on ... (TV, computer, video games)
- Positive attending skills – pay attention to the good stuff
- Establish a home token/point system
- Use positive & negative consequences
- Use time out – effectively!!

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Social Skills Training

- Supervised peer group activities that encourage pro-social behaviour (faith-based groups, Scouts, Cadets, etc.)
- Structured activities where attention, obedience are essential – martial arts, drama activities, pottery, woodworking
- For severe ADHD, individual rather than team/group physical activities such as swimming and gymnastics

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Academic Interventions

- What Can Be Done at School
- If indicated, advocate for psychoeducational school testing to rule out learning disabilities (sample letter requesting psychoeducational school testing)
- Classroom Accommodations
- Accommodations Help Students with ADD – teaching strategies
- Teacher completion of rating scales at least every 3-4 months during the school year to ensure adequate treatment response
- Home/School Communication Plan
- Homework Tips

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Alternative Approaches

- ‘Alternative therapies’ have no published evidence for treatment response especially when compared to placebo

- If parents insist on trying alternative holistic and/or homeopathic approaches, do teacher-blinded baseline (pre) and post rating scales

- Then do the same with medications

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Medications 1

- Prior to initiation of any stimulant, document in chart that you have warned about the possible side effects of stimulant-induced onset or exacerbation of suicidal ideation (see Health Canada advisory dated March 30, 2015)
- See CADDRA and CPS for detailed information about medications
- Over 1000 randomized control trials demonstrating efficacy (Level 1 evidence)
- Combined treatment of medication plus others listed above with optimum outcome
- **First Line** – Long-acting stimulants with greatest efficacy:
  - Adderall XR (Mixed Amphetamine Salts)
  - Biphentin (Methylphenidate Hydrochloride Controlled Release Capsules)
  - Concerta - **not generic!** (Methylphenidate Extended Release)
  - Vyvanse (Lisdexamphetamine)
- **Second Line**
  - Strattera (Atomoxetine)
  - Dexedrine (Dextroamphetamine)
  - Ritalin (Methylphenidate Hydrochloride)

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Medications 2

- Rapid metabolism requires daily compliance
- Use of generic Methylphenidate ER requires **extreme caution** as there are issues regarding its sustained release effects
- Explain treatment objectives using target scores in normal range on rating scales
- Use weight as guide then titrate dose based on rating scale response:
  - Starting dose: methylphenidate based 0.5 mg/kg/day; dextroamphetamine based 0.4 mg/kg/day
  - Average Therapeutic dose: methylphenidate long-acting meds average therapeutic dose 1 mg/kg/day and dextroamphetamine long-acting 0.8 mg/kg/day
- Click here for information about common side effects
- Monitor using SNAP-IV questionnaires completed by school and parents

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Follow-Up Visits 1

- After initial prescription and every alteration in dose, follow up within 4 weeks with rating scales (SNAP 18 or SNAP 90) completed by school and parents

- When therapeutic dose is attained (SNAP score of less than 13 for Attention or Hyperactive/ Impulsive items) monitor at least every 3 to 4 months with completed rating scale

- Dose will need to be increased as growth and tolerance to medication occur

- Negative response to stimulant is generally due to co-morbid disorders such as anxiety and mood disorders. Often, these co-morbid disorders may have to be treated first before successful initiation of stimulant for ADHD is possible.

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Follow-Up Visits 2

Generally side effects diminish over several weeks but if this is not sufficient consider:

- Loss of appetite: Give with/after breakfast; encourage large, non-traditional breakfast, e.g., pizza/burger; BOOST; lower dose; switch to another category methylphenidate vs. dextroamphetamine (Healthy Eating with ADD Medications); school letter to allow snacking in class when hungry

- Insomnia: Improve sleep hygiene routine; decrease physical and mental stimulation prior to bedtime; read in bed then lights out; give earlier in morning; reduce am or after-school dose; switch categories, (ADHD and Sleep)

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Follow-Up Visits 3

Generally side effects diminish over several weeks but if this is not sufficient consider:

- Irritability: Switch from short to long acting; reduce dose, switch categories (methylphenidate vs. dextroamphetamine)

- Flat affect: Reduce dose; switch to long acting; switch class from methylphenidate-based to amphetamine-based or vice versa

- Growth suppression: Reduce dose; switch categories; dietary supplements (Boost); drug holiday in summer/school holidays

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Freely available online comprehensive guides and resources

www.caddra.ca **Canadian ADHD Practice Guidelines:** Comprehensive treatment guide for simple ADHD as well as co morbid ADHD

www.help4adhd.org: Comprehensive information for parents, youth and professionals

www.chadd.org CHADD – Children and Adults with Attention Deficit/Hyperactivity Disorder: Canada's leading non-profit organization serving individuals and families through local chapters

www.offordcentre.com: Provides current and best information on general mental health as well as factors that shape the well-being of children and youth

www.hmhc.ca: Excellent site promoting children's mental health in primary care

www.aacap.org: American Academy of Child and Adolescent Psychiatry website has comprehensive information regarding mental health including videos

www.totallyadd.ca and www.totallyadd.com: Great videos and information

www.adhdratingscales.com SNAP 30 and 90 as well as adult scale ASRS v1

For a comprehensive guide to ADHD in **children**, see "Identification, Diagnosis & Treatment of Child Attention Deficit/Hyperactivity Disorder: A Package for First Contact Health Providers" (Kutcher & MacCarthy, 2011) or visit http://www.teenmentalhealth.org.

For a comprehensive guide to ADHD in **adolescents**, see "Identification, Diagnosis & Treatment of Adolescent Attention Deficit/ Hyperactivity Disorder: A Package for First Contact Health Providers" (Kutcher & MacCarthy, 2011) or visit http://www.teenmentalhealth.org.

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