

# MEDICATION TREATMENT FOR ADHD



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## LEARNING OBJECTIVES

1. To understand the medication options for ADHD
2. To understand how other conditions can influence ADHD treatment
3. To empower you as parents to be active participants in decision-making around your child's ADHD treatment

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## Disclosures

- No financial disclosures (no relationships with any pharmaceutical company)
- I will be using some brand names for clarity
- I will mention one “off-label” medication

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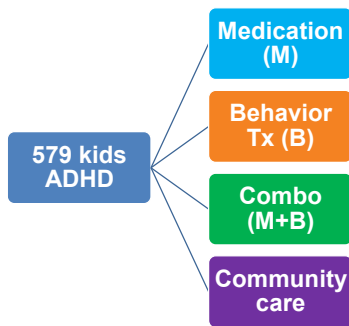
## Take A Deep Breath...Relax

- Find your zone of tranquility... It's easy to get emotional when it comes to our kids.
- ADHD kids are unique despite their symptoms of ADHD. So, it's no surprise that each parent's journey of treating their child's ADHD is unique.
- There is no right or wrong decision with regards to treating your child's ADHD. You know your child best and are a powerful advocate for them.



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## Multimodal treatment study ADHD--1999



- Kids who got medication had the biggest improvement in ADHD symptoms
- Combo group not better than Med group for ADHD symptoms
- Combo group had other benefits: oppositional behavior, social skills, and parent-child relationship
- Kids in the Combo group needed lower medication doses to get the same benefit!

A 14-Month Randomized Clinical Trial of Treatment Strategies for Attention-Deficit/Hyperactivity Disorder  
 The MTA Cooperative Group; Arch Gen Psychiatry. 1999;56(12):1073-1086.

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## When to try Medication....

- ADHD symptoms are interfering with child's functioning
- After evaluation for co-existing conditions
- Assessment of cardiac health
- Assessment of substance use
- Everyone is well educated and prepared for the trial of medication



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## CADDRA TREATMENT GUIDELINES OCT 2024

### 1<sup>ST</sup> LINE

- Long-acting stimulants

### 2<sup>ND</sup> LINE

- Short and intermediate-acting stimulants
- Atomoxetine = Strattera
- Guanfacine XR = Intuniv

CADDRA GUIDE TO ADHD PHARMACOLOGICAL TREATMENTS IN CANADA - OCTOBER 2024						
	Medications & Illustrations	Delivery	Duration of action	Starting dose*	Release mode (Immediate/Delayed %)	Dose titration per product monograph†
<b>AMPHETAMINE-BASED PSYCHOSTIMULANTS</b>						
First Line	Adhaxel XR <sup>®</sup>	Granules can be sprinkled	~12h	5-10 mg q.d. a.m.	50/50	▲ 5-10 mg at weekly intervals Max. dose/day: Children = 20 mg Adults = 40 mg
First Line	Vyvanse <sup>®</sup>	Granules can be sprinkled or suspended Chewable Tablets: 10, 20, 30, 40, 50, 60 mg	~13.5h	20-30 mg q.d. a.m.	Not Applicable (Prodrug)	▲ 10-15 mg by clinical discretion at weekly intervals Max. dose/day: All ages = 60 mg
Second Line	Proactiva <sup>®</sup>	Scored Tablets Sprinkles 10, 15 mg	~4h ~6-8h	Tablets: 10-15 mg b.i.d. Sprinkles = 10 mg q.d. a.m.	100/0 50/50	▲ 10 mg at weekly intervals Max. dose/day: All ages = 30 mg Children & Adolescents = 20-30 mg Adults = 30 mg
<b>METYLPHENIDATE-BASED PSYCHOSTIMULANTS</b>						
First Line	Biphexin <sup>®</sup>	Granules can be sprinkled	~10-12h	10-20 mg q.d. a.m.	40/60	▲ 10 mg at weekly intervals Max. dose/day: Children & Adolescents = 60 mg Adults = 80 mg
First Line	Concerta <sup>®</sup>	Extended Release Tablets 10, 20, 30, 40 mg	~12h	18 mg q.d. a.m.	22/78	▲ 18 mg at weekly intervals Max. dose/day: Children & Adolescents = 54 mg Adults = 72 mg
First Line	Fogasa <sup>®</sup>	Granules can be sprinkled	~13.5h	25 mg q.d. a.m.	20/80	▲ 10-15 mg intervals of no less than 5 days Max. dose/day: Children & Adolescents = 50 mg Adults = 100 mg
First Line	Quilivant XR	Chewable Tablets 20, 30, 40 mg Powder for Oral Suspension 20, 40, 60, 70, 100 mg/5mL	~8-12h ~12h	20 mg q.d. a.m. 20 mg q.d. a.m.	30/70 20/80	Children 6-12 years Titrate up or down weekly in increments of 5 mg Max. dose/day: 40 mg Quilivant XR Oral Suspension and Quilivant XR Chewable Tablets are interchangeable
Second Line	Methylphenidate (short-acting) Ritalin SR	Scored Tablets Wax Matrix Preparation	~3-4h ~8h	5 mg b.i.d. to t.i.d. Adult: 20 mg q.d.	100/0 100/0	▲ 10 mg at weekly intervals Max. dose/day: All ages = 60 mg
<b>NON-PSYCHOSTIMULANT - SELECTIVE NOREPINEPHRENE REUPTAKE INHIBITOR</b>						
Second Line	Atomoxetine (Strattera) <sup>®</sup>	Caplets 10, 18, 25, 40, 60, 80, 100 mg No sugar made/fluorinated	Up to 24h	Children & Adolescents = 0.5 mg/kg/day Adults = 40 mg q.d. 50-100 mg	Not Applicable	Monitor dose for a minimum of 2-3 weeks before adjusting Max. dose/day: Children & Adolescents = 70 mg 70 kg or Adults = 100 mg Max. dose/day: 1 mg/kg/100 mg As adjunctive therapy to psychostimulants: 6-17 years = 4 mg
<b>NON-PSYCHOSTIMULANT - SELECTIVE ALPHA-2A ADRENERGIC RECEPTOR AGONIST</b>						
Second Line	Intuniv XR <sup>®</sup> (Guanfacine XR)	Extended Release Tablets 1, 2, 3, 4 mg	Up to 24h	1 mg q.d. (morning or evening)	Not Applicable	Monitor dose for a minimum of 7 days before adjusting Max. dose/day: 1 mg/kg/100 mg 13-17 years = 7 mg As adjunctive therapy to psychostimulants: 6-17 years = 4 mg

[https://www.caddra.ca/wp-content/uploads/CADDRA\\_ADHD-Medication-Chart\\_EN-FR\\_October2024\\_Final.pdf](https://www.caddra.ca/wp-content/uploads/CADDRA_ADHD-Medication-Chart_EN-FR_October2024_Final.pdf)

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## Why are stimulants first line?

- Medications are the most effective treatment for core ADHD symptoms.
- Stimulants are the most effective medications for ADHD
- Over 90% of children will have symptom improvement with stimulant treatment (50% will be in normal range)
- Work quickly and can be stopped and started easily

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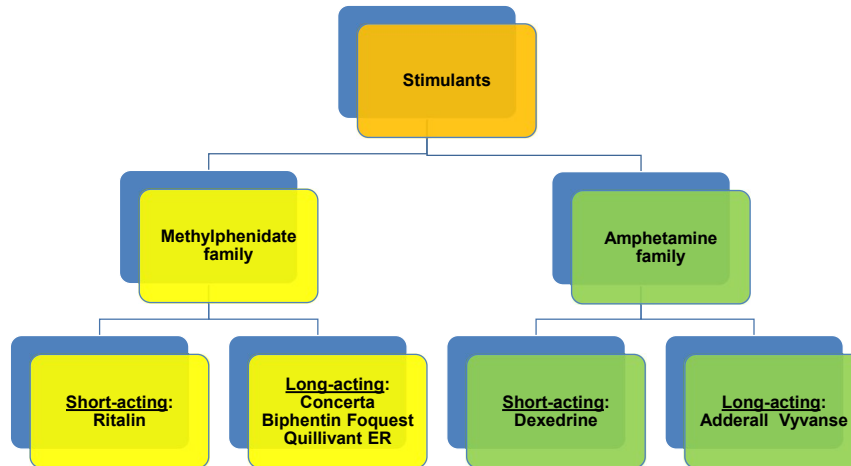
## Stimulants: alert and focus your brain

- **Improve ADHD symptoms:**
  - Increase concentration & attention
  - Decrease impulsivity & hyperactivity/restlessness
- **Secondary effects:**
  - Increase work productivity and accuracy
  - Decrease aggression & defiance (in most children)
  - Improve peer acceptance & interactions
  - Improve self-esteem
  - Improve driving performance



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## Stimulant medication made simple:



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## Stimulant family comparison

### Methylphenidate family

- Ritalin, Biphentin, Concerta, Foquest, Quillivant
- Moderate-strong effect (0.8)
- Milder side effects
- Often tried first, especially with younger kids

### Amphetamine family

- Dexedrine, Adderall, Vyvanse
- Strong effect (1.0)
- Slightly more side effects
- Often tried second especially for younger kids
- Vyvanse works well for teens

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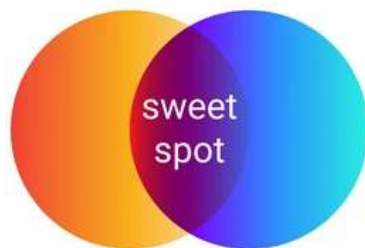
## Stimulants: Side Effects

- **Insomnia (50%+)**
- **Decreased appetite (50%+)**
- **Irritability, anxiety, flat mood (<25%)**
- Stomachaches (<20%)
- Headaches (<15%)
- Worsening of tics
- Growth effects (monitor long term)
- Cardiac effects: increased HR, BP



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## Goal of stimulant treatment is to find the sweet spot...





- Enough medication to get the benefits of the stimulants
- But not so much that side effects are a problem....

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**Compass  
Mental  
Health**  
Supporting Providers

**Managing Stimulant Medications  
in Children and Adolescents**

Amphetamine-based: Adderall XR®, Dexedrine®, Dexedrine Spansules®, Vyvanse®; Methylphenidate: Biphentin®, Concerta®, Focquest®, Ritalin®, Ritalin SR®


This handout has some suggestions to help manage side effects of stimulant medications so your child can get the most benefit from stimulant medications.

## Tips and tricks to manage stimulants

- Appetite problems:
  - Big breakfast, Boost supp.'s, grazing during the day, evening snack, .....
- Sleep problems:
  - Give pill early, sleep hygiene, melatonin, switch to shorter-acting med....
- Irritability/low mood
  - Lower dose, Switch to non-stimulant
- Wears off too quickly
  - Switch to longer acting form, give pill later, add non-stimulant

[https://keltymentalhealth.ca/sites/default/files/resources/ManagingStimulantMedications\\_2022\\_0.pdf](https://keltymentalhealth.ca/sites/default/files/resources/ManagingStimulantMedications_2022_0.pdf)

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**Compass  
Mental  
Health**  
Supporting Providers

## When to consider a non-stimulant (2<sup>nd</sup> line)?

- Stimulants from both medication families haven't worked
- Stimulants work for ADHD symptoms but cause side effects
- Other factors like sleep and anxiety

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## Non-Stimulants: 2<sup>ND</sup> LINE MEDICATIONS

- Guanfacine XR (Intuniv), Clonidine, Atomoxetine (Strattera)
- Must be taken every day
- Dose gradually titrated up when starting and down when stopping.
- Takes 4 to 6 weeks patience to see full therapeutic effect
- Less of a “Wow” on core ADHD symptoms, but can be better tolerated and help more with other things
- No abuse potential

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## Non-stimulant comparison

### Atomoxetine

- Noradrenaline reuptake inhibitor
- Approved for monotherapy (off-label with stimulants)
- **Also helps anxiety**
- Side effects:
  - Stomach upset, dec. appetite
  - Headache
  - Drowsiness, dizziness
  - Potential for irritability, energized feelings
  - Rare: rash, liver problems

### Guanfacine XR (Clonidine)

- Alpha-2 agonists
- Approved for monotherapy and with stimulants
- **Also helps with sleep, emotional regulation, and tics**
- Side effects:
  - Dizziness
  - ↓ Blood pressure
  - Sedation
  - Dry mouth

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# “Drug Holidays”

- Time off medication: can be weekends, spring break, summer
- Easy to do with stimulants
- Can allow for catch-up eating and growth
- **Allows for reassessment of baseline—is medication still needed?**
- Downsides: impact on child's functioning at home and extracurricular activities, e.g summer camp.
- Harder to do with non-stimulants—but possible to try over summer when there is enough time.



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# Practicalities: COST

- Pharmacare requires you to first try a short or intermediate-acting stimulant to be able to be eligible for long-acting stimulant
- Pharmacare covers Concerta, Fozquest, Adderall, Vyvanse and Strattera
- Other ADHD medications (Biphentin, Quillivant, Intuniv) may be covered by extended health plans
- Clonidine is good replacement for Intuniv if not covered
- Go to BC Pharmacare online.

**BRITISH COLUMBIA** Ministry of Health  
**SPECIAL AUTHORITY REQUEST**  
**MEDICATION COVERAGE FOR**  
**ATTENTION DEFICIT AND HYPERACTIVITY DISORDER (ADHD)**  
MCH 3472 Rev. 2020/01/17

For up to date criteria and forms, please check [www.gov.bc.ca/pharmacare/specialauthority](http://www.gov.bc.ca/pharmacare/specialauthority)  
Fax requests to 1 800 669-4884 (toll free) OR mail requests to PharmaCare, Box 9652 Stn Prov Govt, Victoria, BC V8W 9P4  
This form is a Doctor Patient consent and contains confidential information intended only for PharmaCare. Any other distribution, copying or disclosure is strictly prohibited. If you have received this fax or email, please enter "NO-DIRECT" across the front of the form and fax toll free to 1 800 669-4884, then destroy the pages received to ensure  
If PharmaCare approves this Special Authority request, approval is granted solely for the purpose of covering prescription costs. PharmaCare approval does not indicate that the requested medication is, or is not, suitable for any specific patient or condition.  
Forms with information missing will be returned for completion. If no prescriber fax or mailing address is provided, PharmaCare will be unable to return a response.

<b>SECTION 1 - PRESCRIBER INFORMATION</b>		<b>SECTION 2 - PATIENT INFORMATION</b>	
Name and Mailing Address		Patient Family Name	
College ID (use ONLY College ID number)		Patient (Given) Name(s)	
Phone Number (include area code)		Date of Birth (YYYY / MM / DD)	
Prescriber's Tax Number		Date of Application (YYYY / MM / DD)	
<b>CRITICAL FOR A TIMELY RESPONSE</b> →		<b>CRITICAL FOR PROCESSING</b> →	
Personal Health Number (PHN)			

**SECTION 3 - DIAGNOSIS (REQUIRED FOR ALL DRUGS)**  
 Patient is 6 years of age or older, and has a diagnosis of Attention Deficit Hyperactivity Disorder (ADHD) with hyperactivity, impulsivity, or inattention that interferes with functioning.

**SECTION 4 - REQUESTED MEDICATION (COMPLETE EITHER A OR B)**

**A. LONG-ACTING STIMULANT: 9901-0092**  
Mixed amphetamine salts ER  
Lisdexamfetamine  
Methylphenidate ER (Concerta and its generics)  
Criteria: Unsuccessful trial of or intolerance to immediate or sustained release stimulant; unsuccessful trial is defined as no demonstrated effectiveness for symptoms of ADHD or functional impairment secondary to ADHD after a minimum 7 week trial of an adequate dose of immediate or sustained release medication. Patient requires 12 hours of continuous coverage.  
 methylphenidate ER SR  
OR  
 dextroamphetamine IR SR  
dose & duration of trial: \_\_\_\_\_  
details of unsatisfactory results or intolerance: \_\_\_\_\_

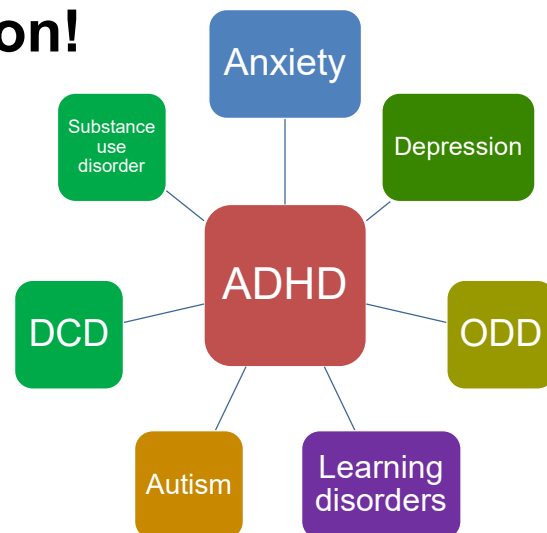
OR  **B. ATOMOXETINE: 9901-0091**  
Criteria:  
1. Unsuccessful trial of or intolerance to both methylphenidate AND an amphetamine:  
Unsuccessful trial is defined as no demonstrated effectiveness for symptoms of or functional impairment secondary to ADHD after a minimum 7 week trial of an adequate dose of both methylphenidate and an amphetamine. At least one trial must be with an extended release / long acting stimulant.  
a) methylphenidate:  ER SR  IR  
dose and duration of trial: \_\_\_\_\_  
details of unsatisfactory results or intolerance: \_\_\_\_\_  
AND  
b) amphetamine (drug tried): \_\_\_\_\_  
dose and duration of trial: \_\_\_\_\_  
details of unsatisfactory results or intolerance: \_\_\_\_\_  
OR  
2. Patient has a contraindication to stimulants (provide details): \_\_\_\_\_

## ADHD +: What to do when there's more than one thing going on?

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### Comorbidity is common!

- Over half of children with ADHD have at least one other condition.
- Many children will have two or more other conditions.



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## How to treat ADHD in children with anxiety?

- **Counseling**
  - Cognitive behavioral therapy (CBT) is first line treatment
  - Can help with anxiety management and help mitigate impact of ADHD on self-esteem
  - Available through CYMH teams, private counselors; visit Kely for resource lists for anxiety
- **Mild to moderate anxiety:**
  - Try treating ADHD first—in many children, improving ADHD symptoms can help decrease **anxiety as their lives become less stressful and chaotic**
- **Moderate to severe anxiety:**
  - Consider starting an SSRI (fluoxetine, sertraline, or escitalopram) first, before starting stimulant medication for ADHD.

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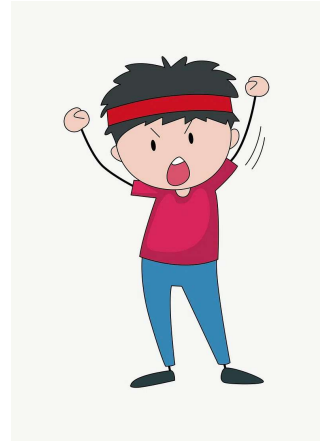
## How to treat ADHD in Autism

- Stimulant medications are still first-line
- Watch for activating side effects
- Guanfacine XR and Clonidine are good alternatives to stimulants because of their benefit for emotional regulation
- Ensure appropriate supports are in place for the child in school and at home
- Watch for anxiety—can look different in kids with Autism

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## How to treat ADHD in children with ODD?

- ODD describes challenging behaviors, but doesn't say anything about what is contributing to the behavior
- Children want to be successful and difficult behaviors are usually the result of poor coping skills which overwhelm the child's ability to deal with a stressor
- Treating ADHD with stimulants generally helps ODD as it allows child to have a bit more of a filter and time to think before they react
- Parenting and family interventions are particularly important!



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## CONCLUSIONS

For best outcomes, consider medication and non-medication treatment.

Stimulant medications are first-line in almost all cases

ADHD medications can protect against negative outcomes of ADHD

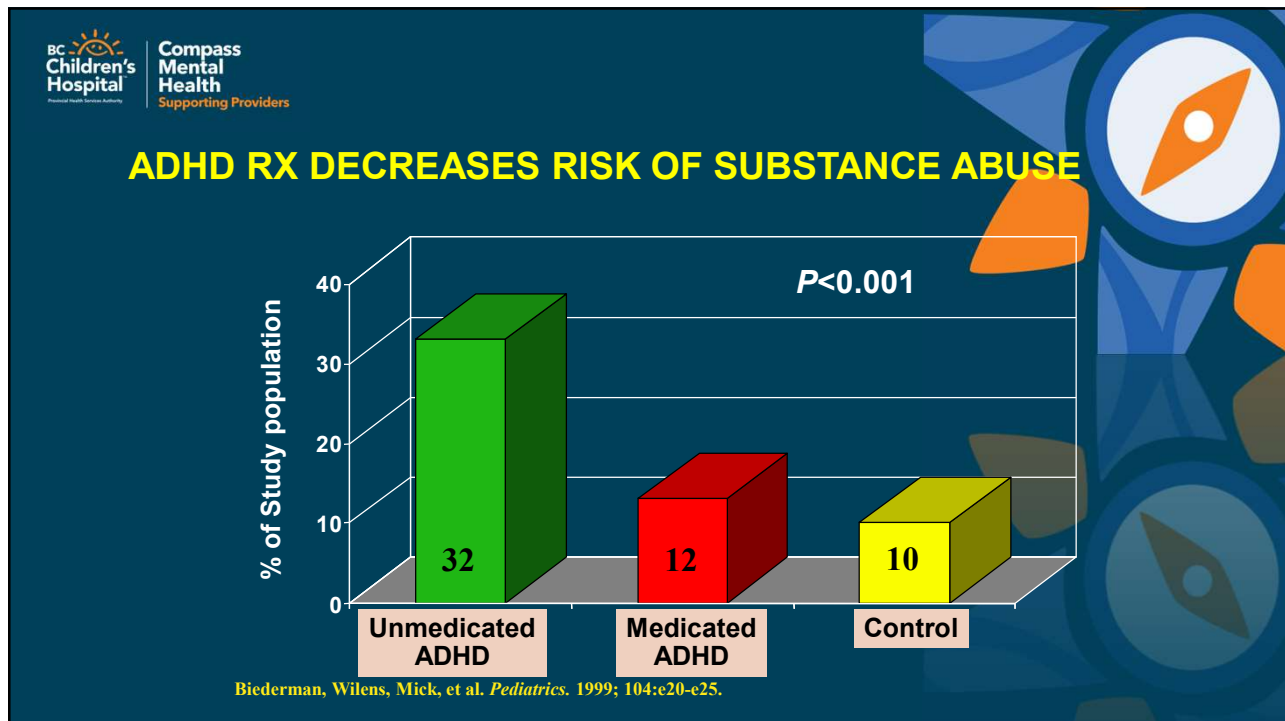
Comorbidities are common and can affect choice of treatment

**The more you and your child become experts in your ADHD, the better able you are to direct and improve treatment outcomes**

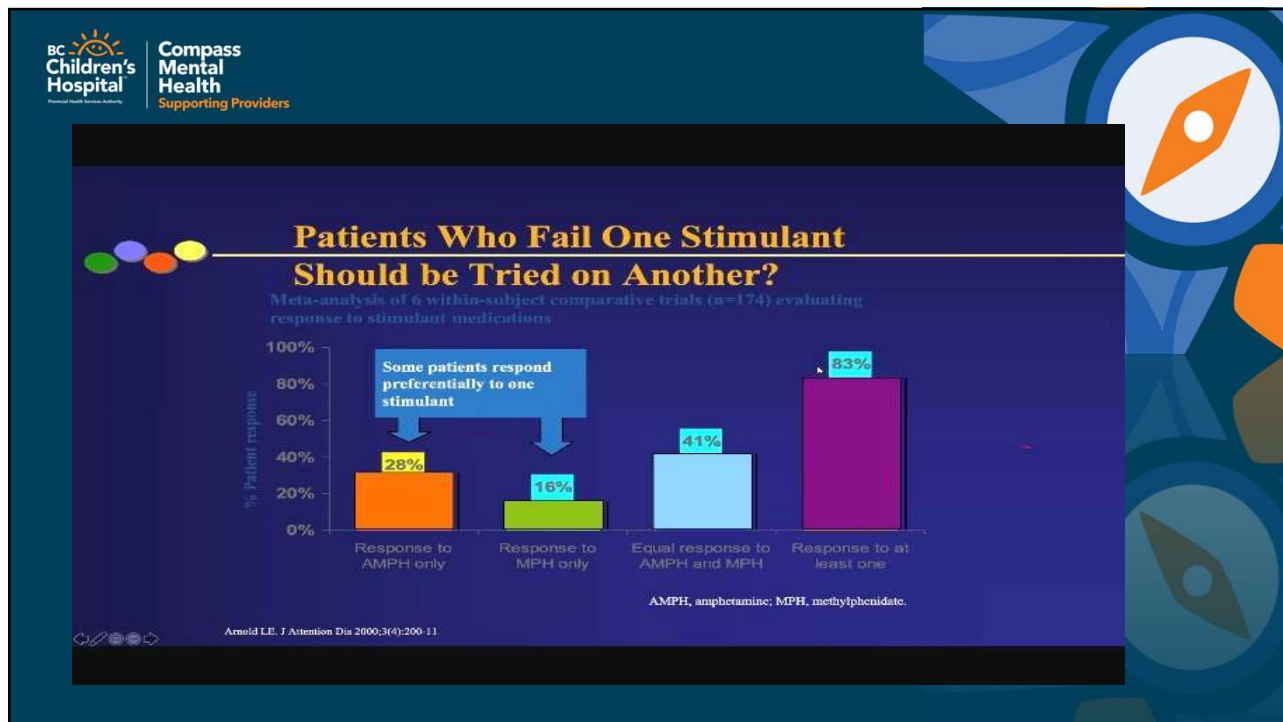
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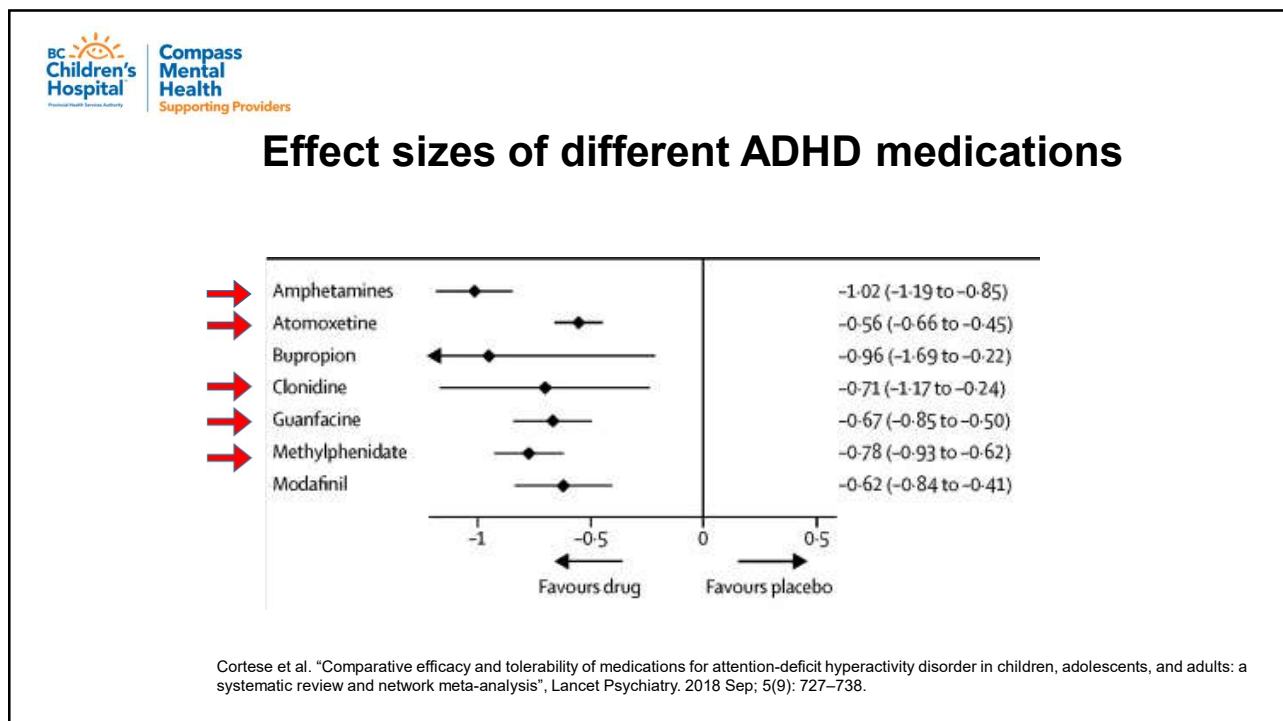
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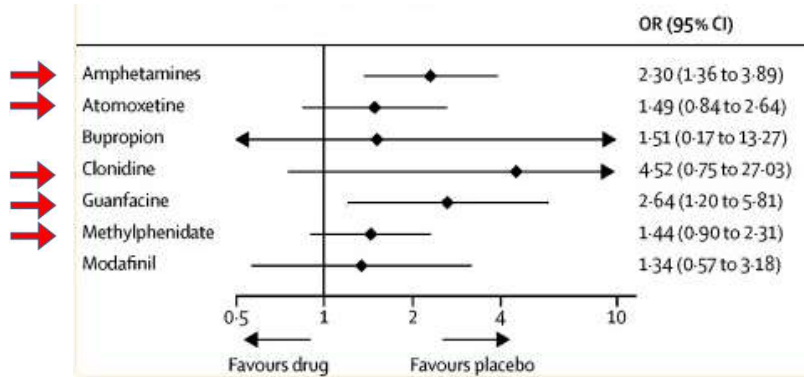


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## Tolerability of different ADHD medications



Cortese et al. "Comparative efficacy and tolerability of medications for attention-deficit hyperactivity disorder in children, adolescents, and adults: a systematic review and network meta-analysis", *Lancet Psychiatry*. 2018 Sep; 5(9): 727–738.