

# Overview of Mental Health Medications for Children and Adolescents

Module 5  
ADHD and  
Disruptive Behavior Disorders

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## ADHD: Pharmacotherapy

- \* Stimulants
  - \* Methylphenidate      Vyvanse (lisdexamfetamine)
  - \* Amphetamines
  - \* Atomoxetine (Strattera)
- \* Other
  - \* TCAs
  - \* Welbutrin
  - \* SSRIs
  - \* Modenifil

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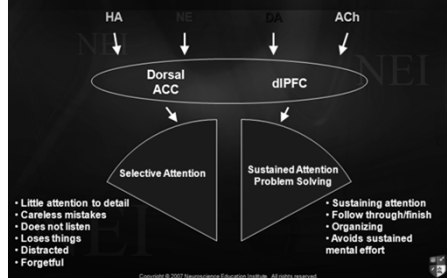
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### Match Neurotransmitters with Circuits



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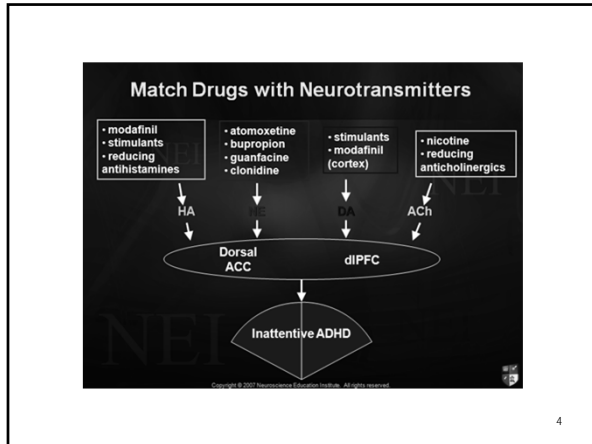
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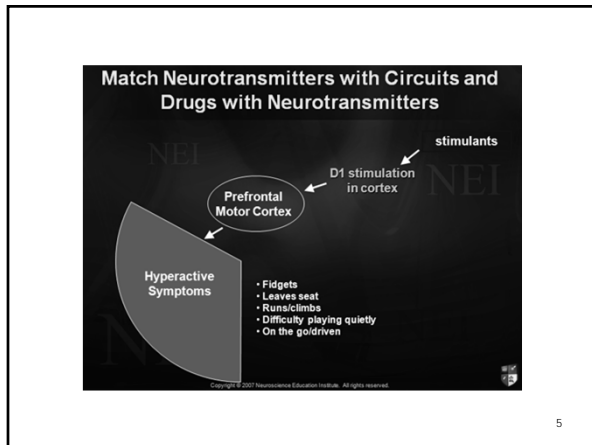
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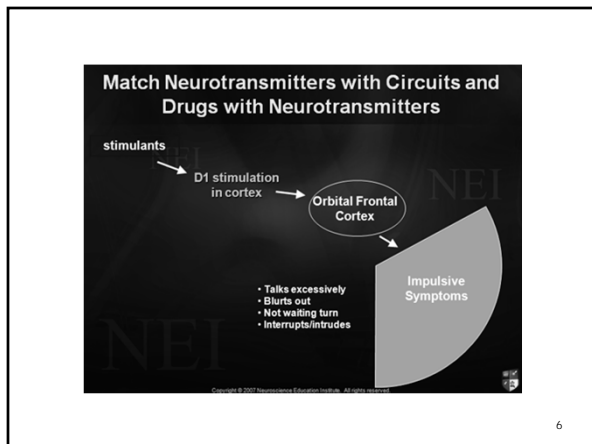
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### ADHD: Stimulants

- \* Produce behavioral effects by increasing synaptic activity of monoamines (DA/NE)
- \* "Excite inhibitory pathways" = greater control
- \* Act as indirect agonists – increase the ability of the transmitter to act without a direct action on postsynaptic receptors
- \* All enhance executive functioning in the prefrontal cortex which corrects the deficits in inhibitory control and working memory

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### ADHD: Stimulants

- \* Advantages
  - \* "Safest" of the available medications
  - \* Considered to have a robust short term effect with > 80% benefit
  - \* Wide therapeutic window in dosing schedules and doses
- \* Disadvantages
  - \* Schedule II
  - \* Abuse and diversion

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### Stimulants: Adverse Effects

- \* Extensions of pharmacology
- \* Common side effects
  - \* Anxiety, irritability, insomnia – dose related
  - \* Anorexia – worse with d-amphetamine and sustained release preparations
  - \* Sympathomimetic effects – BP, HR, headaches

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Stimulants: Rx Interactions

- \* Additive effects with other stimulants with increased occurrence of:
  - \* Insomnia
  - \* Sympathomimetic effects
  - \* CNS –irritability, nervousness, seizure
- \* Interaction with dietary supplements and herbs possible

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Choosing the right Medication

- \* Most patients will benefit from stimulants that have been approved by the FDA
- \* Most will respond to either methylphenidate or amphetamine but some will respond better to one than the other
- \* No single drug preparation meets the needs of all

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Choosing the Right Medication

- \* Not all patients need to be treated for 12 or more hrs each day
- \* Medication after school may not be required if child can get homework done in quiet environment
- \* Afterschool programs may require tweaking of extended release drugs

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### Choosing the Right Medication

- \* Titration may be difficult
  - \* No relationship between age or body weight and dose
  - \* Marked individual variability in dose response relationship
- \* Specific dose may improve symptoms but higher dose may be needed to improve function
- \* Optimal dose improves symptoms and functionality with minimal adverse effects

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### Concerta

- \* Extended release methylphenidate
- \* Tablet uses osmotic technology
- \* Duration 12 hrs
- \* Peak plasma levels 6-8 hrs



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### Oppositional Defiant Disorder

- \* Negative, hostile or defiant behavior
- \* Symptoms emerge before 8 yrs of age
- \* Can emerge to conduct disorder
  - \* Repetitive, persistent pattern of conduct that violates rights of others
  - \* Aggression, property destruction, lying, theft
  - \* Poor interpersonal skills
  - \* Peer rejection

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Mental Health Medications for  
Conduct Disorders

- \* Aggression – stimulants
- \* Rage, temper outbursts – anti-convulsants
- \* Aggression – lithium
- \* Over-arousal – clonidine
- \* Severe conduct disorder – atypical antipsychotics, neuroleptics

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