



# **ADHD Medication Expert: Expanding Your Role In Mental Health Intervention**

**Kansas Association of School Psychologists**

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# ADHD Medication Experts – Why School Psychologists??

**Name the professionals (job titles) in your community(ies) who are knowledgeable about psychotropic medications...**



**Now that you have likely named a maximum of 3...,  
which of them can be contacted by students' parents  
or teachers or others throughout the day?**



**School Psychologists**

# Why train school psychologists?

- We can perform important liaison roles between parents, teachers, and physicians.
- We are capable of providing important data on the presence and degree of symptoms seen in classrooms to aid in proper diagnosis.
- We can provide valuable summaries of side-effects data reported by teachers.
- We know how to objectively evaluate research quality (DuPaul, 2003).

# If we are knowledgeable of evidence-based practices, are we not obligated to discuss them??

NASP ethical guidelines strongly suggest we offer our expertise.

“School Psychologists are committed to the *application of their professional expertise* for the purpose of *promoting improvement in the quality of life for children...* psychologists must *practice within the boundaries of their competence, use the science of psychology to help students and others make informed choices...*” (Jacob & Hartshorne, 2009)

The discussion of medication and **Child Medication Safety Acts.**

# Stimulant Treatment of ADHD

- Sixty-plus years of research findings have been consistently positive. Considered first line of treatment. (American Academy of Child and Adolescent Psychiatry, [AACAP] 2007)
- Enhanced cognitive functioning, vigilance and sustained attention have been reported (Smith, & Farah, 2011)
- Improvement in classroom functioning/academic efficiency is gained (Brown & Sawyer, 1998; Pelham, et al., 2002)
- Associated with decreased rates of substance abuse (Biederman, et al., 2008)

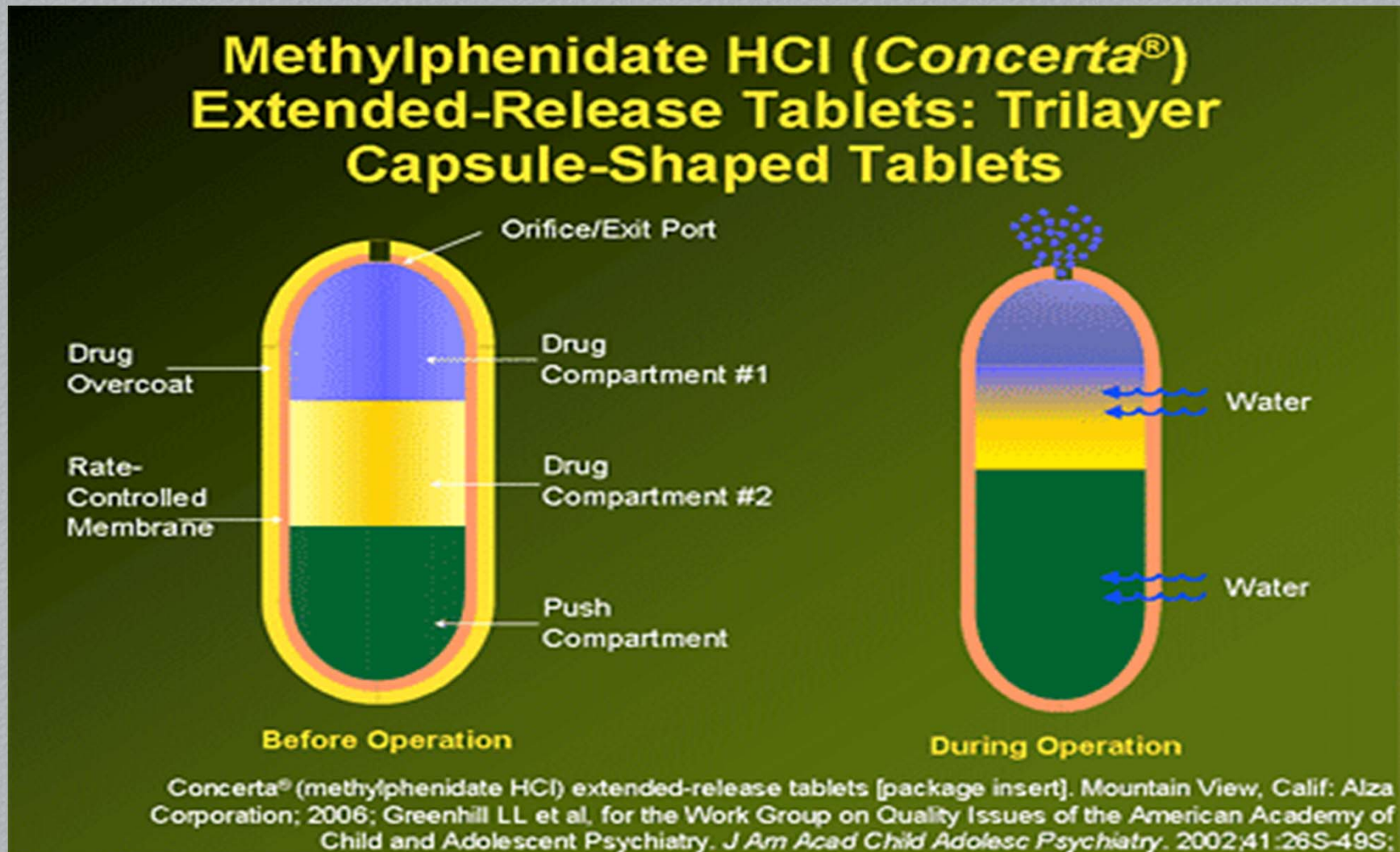
# Development and Benefits of Extended-Release Stimulants



## Advantages:

- One dose may maintain effect through after school activities (Buitelaar, J. & Medori, 2010; Greydanus, Nazeer, & Patel, 2009).
- ER formulas may require less dosage to achieve same effect as short acting forms (May & Kratochvil, 2010).
- Increased adherence (Faraone, 2009)
- Offers increased convenience and greater confidentiality (AACAP, 2007)

# Extended-release formulas work differently and prevent abuse. Concerta illustration:



# methylphenidate (MPH)

Most common stimulant used for ADHD treatment

Available since late 1950s

Extended release formulas can last up to 12 hours

Pharmacology:

- Increases the amount of dopamine in the brain  
(Greydanus, et al., 2009; Wilens, 2006)

## MPH continued...

- Ritalin SR, sustained release tablets; 20mg
  - 6-8 hour effect
  - Unpredictable gastrointestinal absorption in  $\frac{1}{2}$  of users (Greydanus, et al.)
- Ritalin LA, (long-acting) 10, 20, 30, 40mg
  - 4-8 hour effect
  - Contains equal amounts of immediate release (IR) and sustained release (SR) MPH – effect is similar to 2 IR taken 4 hours apart (Nair & Moss, 2009).

## MPH continued...

- Methylin ER, extended release tablets; 10, 20mg
  - 4-8 hour effect
- Metadate ER, extended release tablets; 10, 20mg
  - 4-8 hour effect
- Metadate CD, extended release capsules (can be sprinkled); 10, 20, 30 mg
  - 1-2 doses a day
  - 4-8 hour effect
  - Releases about 30% of the MPH immediately and the remaining MPH is gradually released over the next 6-8 hours.

(Nair & Moss, 2009)

## MPH continued...

- Concerta, capsules; 18, 27, 36, 54mg
  - 8-12 hour effect; 22% of medication is released immediately; remainder gradually (Greydanus, et al., 2009)
  - Effect similar to 3 IR's (4 hours apart) (Rains & Scahill, 2004)
- Daytrana transdermal patch; 10, 15, 20, 30mg
  - Apply 2 hours before effect, remove 9 hours later (Patrick, Straughn, Perkins, & González, 2009)
  - 12 hour effect  
(May & Kratochvil, 2010)
  - Release of medication is more consistent than that found in capsule administration

## d-methylphenidate

- Focalin, tablets; 2.5, 5, 10mg
  - 4-6 hour effect
- Focalin XR, extended release capsules (can be sprinkled); 5, 10mg
  - 8-12 hour effect (Nair & Moss, 2009)
- Pharmacology of d-methylphenidate:
  - d-isomer – twice as potent (Keating & Figgett, 2002)

# d-amphetamine

- Dexedrine Spansule, spansule (can be sprinkled); 5, 10, 15mg
  - 6-10 hour effect
  - Can combine longer & shorter acting if needed

## d,l-amphetamine (mixed amphetamine salts)

- Adderall XR, extended release capsules (can be sprinkled); 5, 10, 15, 20, 25, 30mg
  - 8-12 hour effect

(Greydanus, et al., 2009)

# lisdexamfetamine (Vyvanse)

- First stimulant prodrug approved by the FDA (2007)
- Hypothesized to have less potential for abuse than previous stimulants (Jasinski & Krishnan, 2009)
- Side effects and overall efficacy are very similar to other once-a-day stimulants (Blick & Keating, 2007)
- Necessity?

# Non-Stimulants

## atomoxetine (Strattera)

- A non-stimulant medication available since 2003
- A norepinephrine reuptake inhibitor
- Lower potential for abuse (among substance abusers)
- Recommended when psychostimulants are undesirable, not tolerated, or ineffective (Wood & Lumley, 2005)
- Considered to have less therapeutic effects than stimulants (Wigal, 2009) Stimulant naïve effect? (Wood & Lumley)
- 18-24 hr.; Capsule 10, 18, 25, 40, 60mg (Michelson, 2004)

# Non-Stimulants continued...

## guanfacine XR (Intuniv)

- Approved in 2009 for 6-17 year olds (May & Kratochvil, 2010)
- Appears effective, but comes with side effects such as headache, fatigue, and sedation (Sallee, Lyne, Wigal, & McGough, 2009)
- Method by which Intuniv controls symptoms of ADHD is unknown...and only 2 studies claim it works (see last point below).
- Though it appears to work with certain receptors in the prefrontal cortex. The prefrontal cortex is part of the brain where behaviors such as inattention and impulsivity are thought to be controlled.
- Questionable research methodology to establish efficacy (see Sallee, et al.; Biederman, et al.,2009)

# bupropion bromide (Aplenzin)

- Studies document efficacy
- Bromide formula may have lower risk of possible seizures than traditional bupropion hydrochloride (Wellbutrin XL, etc. plus generics) (Henshall, et al.)
- Worth worrying...Is the seizure concern with the hydrochloride formula that significant?

# Conclusions

- If guanfacine extended release (Intuniv) performs like short-acting guanfacine, the drug will likely become one possible choice for augmenting other ADHD meds (much like the way clonidine is currently used).
- Bupropion bromide's (Aplenzin) popularity will likely be correlated to the degree patients, or their parents, can be convinced that the seizure risk of traditional bupropion hydrochloride (generic) is significant.
- The newest stimulant, lisdexamfetamine (Vyvanse), has no research support to justify its use over other extended-release stimulants such as Concerta or Adderall XL (available generically as mixed amphetamine salts XL), which are far more economical.
- Unfortunately, the comparative research we desperately need will likely never take place while the name brands maintain their patents. Therefore, educated hypotheses like those above along with cost-benefit analyses may be the only bases for prudent decisions.

# Common complaints...

- “Physicians prescribe the latest drugs without telling parents about effective low-cost options.”  
Application of professional expertise; Practice within the boundaries of competence
- “My son’s doctor asks me how I think he is doing and I think, how do I know –I see him 3 hours per day.  
Promoting improvement in the quality of life in children
- “The doctor gave my daughter a 10-minute office exam and said she had ADHD. I thought how can you know that in 10 minutes but who am I to argue with a doctor?”  
Application of professional expertise; Practice within the boundaries of competence
- “Sometimes I think that if I had known about this ADHD stuff earlier, my son would be in better shape.”  
Application of professional expertise; Promoting improvement in the quality of life for children; Practice within the boundaries of competence; Use the science of psychology to help students and others make informed choices



Questions?

Comments?

Thank you for your attendance and participation.