



Mrkq#1#E dln | #M1/#P G

P relh/#Daledp d

584#67509776

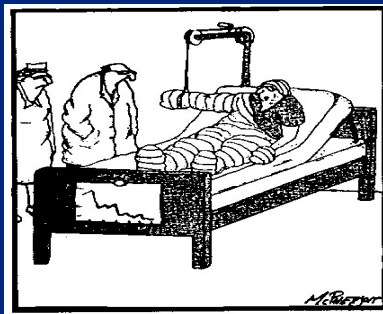
DGKG #dgg#Jhælhg#F rggLwrv#g#F k.lgjhq# #Dgxow

zzz FDOr:P relhfrp

dgggrfC ehævrxw.kjhw



WHY I LEFT FAMILY PRACTICE FOR PSYCHIATRY



“ Your insurance company is refusing to pay your medical bills. They say you were already an idiot before you decided to roller-blade down the interstate. ”



DISCLOSURE

- Paid participant:
 - Real-world Adderall® Studies, 1990's
 - Adderall® IR
- Paid participant:
 - LADD-CAT Study, 2001
 - Adderall XR®
- Paid speaker:
 - Tris Pharma, 2016 ->

Otherwise, since 2001, I have had no financial involvement with any entity involved with ADHD some travel expenses for ADHD conferences at which I spoke *gratis*.



PSYCHIATRIC TREATMENT



- ADHD MEDS 101 -
For Home, School, &
Work



TREATMENT SUCCESS

-- Bailey's 1st Law of Medication --

*“SUCCESS IN LIFE WITH ADHD
IS PROPORTIONAL TO
THE PERCENTAGE
OF LIFE TREATED WELL”*



TREATMENT SUCCESS

-- Bailey's 2nd Law of Medication --

*"LIFE'S HARDER
IF THE MEDICINE ISN'T RIGHT"*



TREATMENT SUCCESS

-- Bailey's 2nd Law of Medication --

*"LIFE'S HARDER
IF THE MEDICINE ISN'T RIGHT"*

- Drug*
- Delivery System*
- Dose*
- Frequency*
- Timing*



SLIM OUTLINE

- Available medications
- Non-stimulants & stimulants
- What's officially OK & what's not
- What works - what doesn't
- Forms & delivery systems
- Dosages
- Durations of action
- Engineering continuous action



CAVEATS *and all that stuff*

- What I say isn't all you need to know nor gospel.
- Information presented is for general medical education.
- It is not intended to establish a standard of care or to bear upon any specific patient.
- I am not endorsing or condemning any product.
- I may use brand names at times because of audience familiarity, not recommendation.
- Any drug may be the best drug for any 1 patient.



CAVEATS *and all that stuff*

- Ages, dosages, frequencies, durations, indications, etc. discussed will not all conform to FDA's or manufacturer's product information.
- Not every statement or treatment possibility mentioned has received ideal scientific study. Some have received none.
- Some is fact, some is observation, some is opinion.
- Don't rely on or do anything treatment-related in this presentation unless your doctor agrees with it.
- Follow label directions, cautions, & all drug laws.
- Your mileage may vary.



PSYCHIATRIC APOTHECARY

<u>DIAGNOSIS</u>	<u>AVAILABLE MEDS</u>	
Depression	25 +	00000000000000000000000000000000
Anxiety	18 +	000000000000000000000000
Sleep	17 +	000000000000000000000000
Cyclic Moods	11 +	000000000000
<u>ADHD</u>	6	000000



ADHD APOTHECARY

<u>NON - STIMULANTS</u>	Adrenalin Inhibitors	clonidine
		guanfacine
	N-T Magnifier	atomoxetine
	<i>Miscellaneous</i>	<i>(none are "indicated")</i>
<u>STIMULANTS</u>	N-T Releaser & Magnifier	amphetamine
		methamphetamine
	N-T Magnifier	methylphenidate



“ADHD MEDS“

NOT INDICATED FOR ADHD

Off-Label Usage with Minimal Evaluation

- Antinarcotics
 - Provigil®, Nuvigil®
- Appetite Suppressants
 - Adipex-P® (phentermine), Tenuate®, Bontril®, Didrex®
- Antiparkinsonians
 - Symmetrel® (amantadine), Requip® (ropinirole)
- MAOI's
 - Parnate®, Nardil®, Marplan®, Emsam® (selegiline patch)
- Antidepressants
 - Wellbutrin®, Effexor®, Cymbalta®, tricyclics



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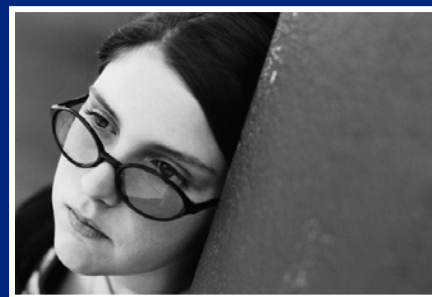
WHY ANTIDEPRESSANTS ?

DEPRESSION

Mimics

ADHD

Memory
Concentration
Focus
Motivation
Interest



*TWICE AS HARD --
-- HALF AS FAR*

--ADDA Conference Theme, 1996



HERBALS
NUTRACEUTICALS
NOOTROPICS
HOMEOPATHIC MEDS
DIETARY SUPPLEMENTS

No rigid, placebo-controlled, scientific study
has ever shown a useful
and statistically valid benefit
from any such agent.*



WHAT IS A DRUG?



DRUG

A substance which,
when administered to a rat,
produces a doctoral dissertation.



ADHD MEDICATION FIELD



ADHD MEDICATION FIELD

Left Field
amantadine
phentermine
modafinil

Center Field
amphetamine
methylphenidate

Right Field
guanfacine
clonidine

Stay on the Bus
methamphetamine
MAOI's
tricyclic anti-d's

Dugout
atomoxetine
bupropion
venlafaxine

Center for
Attention
& Learning

'APPROVED' ADHD FIELD

Left Field
amantadine
phentermine
modafinil

Center Field
AMPHETAMINE
METHYLPHENIDATE

Right Field
GUANFACINE
CLONIDINE

Stay on the Bus
METHAMPHETAMINE
MAOI's
tricyclic anti-d's

Dugout
ATOMOXETINE
bupropion
venlafaxine

Center for
Attention
& Learning

ADHD STIMULANT FIELD

Left Field
amantadine
phentermine
modafinil

Center Field
AMPHETAMINE
METHYLPHENIDATE

Right Field
GUANFACINE
CLONIDINE

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Dugout
ATOMOXETINE
bupropion
venlafaxine

Center for
Attention
& Learning

STRATTERA®

Atomoxetine

- Failed Antidepressant
- Non-Stimulant
 - Better P.R.
 - In drug-misuse patients?
- Non-Controlled
 - Can be called in
 - Can be refilled
- OK: 6 YO - Adults
- Doses 'missable'
 - Effect rolls over
- Main engine vs helper-engine
 - Booster?



STRATTERA®

Atomoxetine

- Frequent Side Effects . . .
 - GI upset common - 20% - nausea, vomiting, pain
 - Poor appetite common
 - Sleepiness frequent
 - Headache
 - Urinary flow problems
- Other Issues . . .
 - 'Black-box' warning - suicide discussion required
 - Blows up bipolar & cyclothymia - especially teens?
 - Liver damage occasional



STRATTERA® Atomoxetine

- Nuisances
 - Rarer success than stimulants - 75% vs 95%
 - Slow onset - 1 month -- *after* target dose
- Concerns
 - Unpredictable metabolism
 - Dosage & frequency vary
 - Drug interactions
 - CV cautions suggested
 - -- as with stimulants
- 2 Achilles' Heels !!
 - Vague, indistinct effect
 - Harm from missed doses not noticed
 - Initial reassurance . . .
 - ---> *stealthy fadeaway*
 - *Frequently works for 4-6 months - only !!*

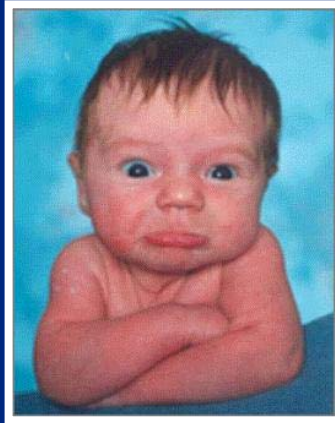


ALPHA-2 AGONISTS 'INHIBITORS' Clonidine - Guanfacine

- Inhibit norepinephrine signaling in brain
 - Reduces overactivation
- Best ---- ADHD w/ *Oppositionality, Agitation, Anger, & Aggression*
- Good ---- *Impulsivity & Distractibility*
- Fair ---- *Physical Hyperactivity*
- Poor ---- *Inattention & Focus*
- Helpful with tics
 - Virgin or stimulant-augmented (disputed)
- “De-fuser”



ALPHA-2 AGONISTS



DE-FUSING CANDIDATE



CLONIDINE

- **OLD ADULT ANTIHYPERTENSIVE - *Catapres*®**
 - Short-acting tabs not indicated for ADHD
 - Not practical
 - 4 doses/day - ADHD rebound 3 X a day if dose late
 - Daytime sleepiness
 - Kapvay® - time-release
 - No adult or long-term studies
 - Tic treatment consideration
- **BEST FOR HYPERACTIVITY - IMPULSIVITY**
 - Good inhibitor
 - Poor attention magnifier
- **BEST USES:**
 - Tabs as sleep agent (*not indicated*)
 - Add to stimulants



GUANFACINE

- Old adult antihypertensive drug - *Tenex*®
 - Better for ADHD than for HBP
 - Most US use is ADHD
- Inherent 8-12 hour duration
- Economical - generic long and short work well
- Useful addition to stimulants
- First-line / safest agent for tics (*disputed*)
- Suppresses night ADHD awakenings
- Intuniv® - 12-24 hour duration
 - More 'magical' than generic guanfacine
 - Most prefer to generic
- Best for **Irritability, Anger, S.T.O.** (*Status Ticked Off*)
 - “*He’s nicer!*”



GUANFACINE DEFICIENCY



STIMULANTS



STIMULANT DRUG

One which causes a temporary arousal of central nervous system activity, resulting in increases in:

- Alertness
- Wakefulness
- Consciousness
- Awareness
- Stimulus recognition
- Sense of well-being
- Mood
- Energy
- Interest
- Motivation



STIMULANT DURATIONS -- VIP!

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Rit.® Tabs			?												
Focalin® Tabs															
Dex Tabs															
'Adderall®' Tabs				?											
Dextroamphetamine ER															
F-XR® R-LA® M-CD®															
Aptensio XR®															
Adderall XR®							?								
Concerta®							?								
Vyvanse®															
Dyanavel XR®															
Mydayis®											?			?	



DISPENSING or CONCENTRATION

CURVES

VS

EFFECTIVENESS

CURVES

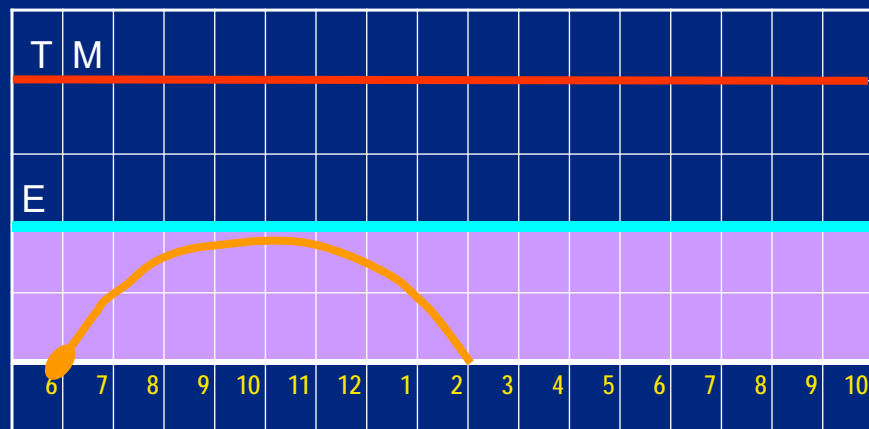


CONCENTRATION \neq EFFECTIVENESS



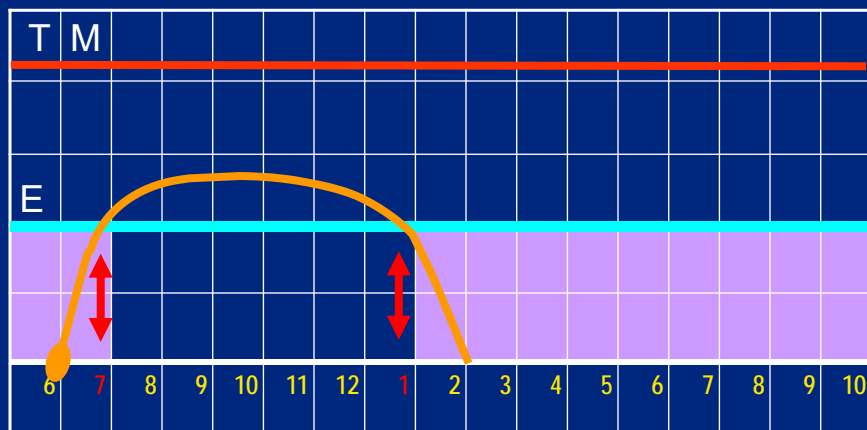
Center for
Attention
& Learning

GENERAL EFFECTIVENESS CURVE



Center for
Attention
& Learning

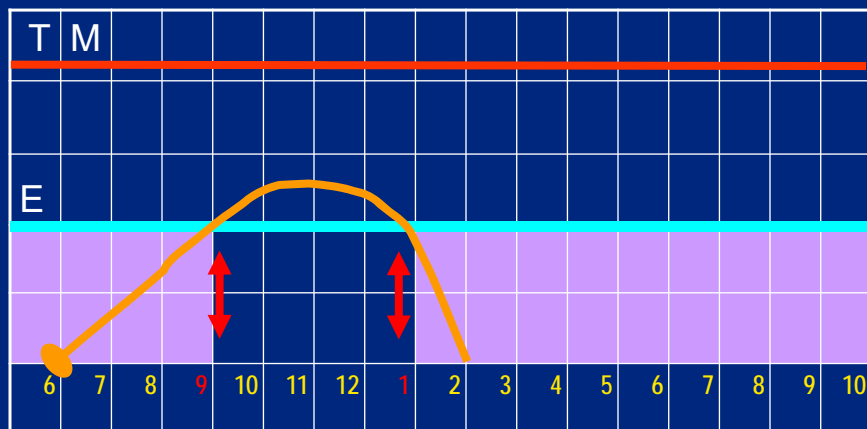
GENERAL EFFECTIVENESS CURVE



Rapid Onset



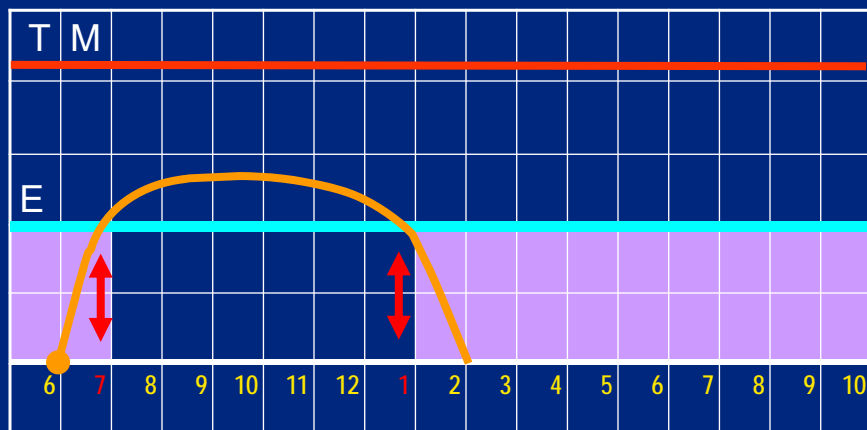
GENERAL EFFECTIVENESS CURVE



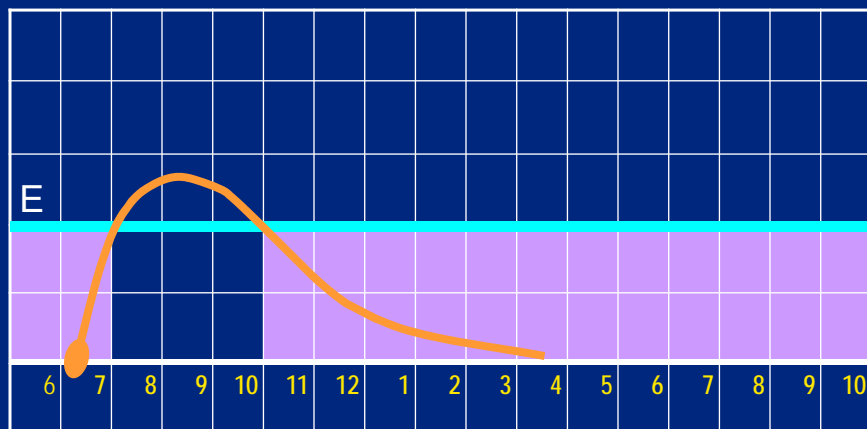
Slow Onset



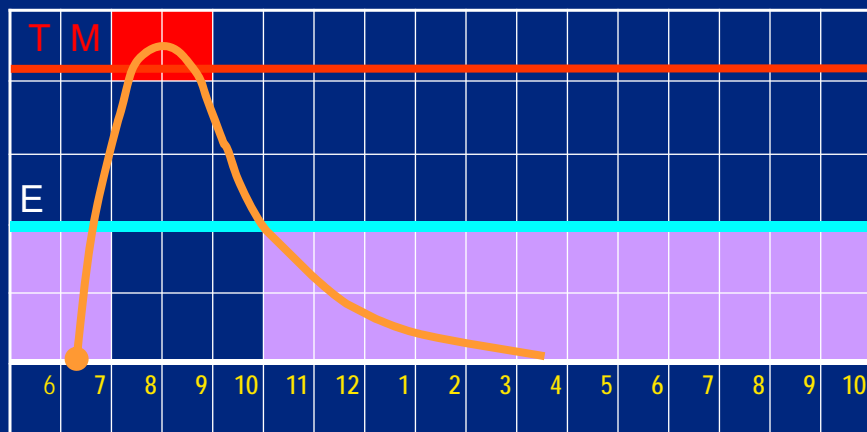
“SOAPBOX MODE”



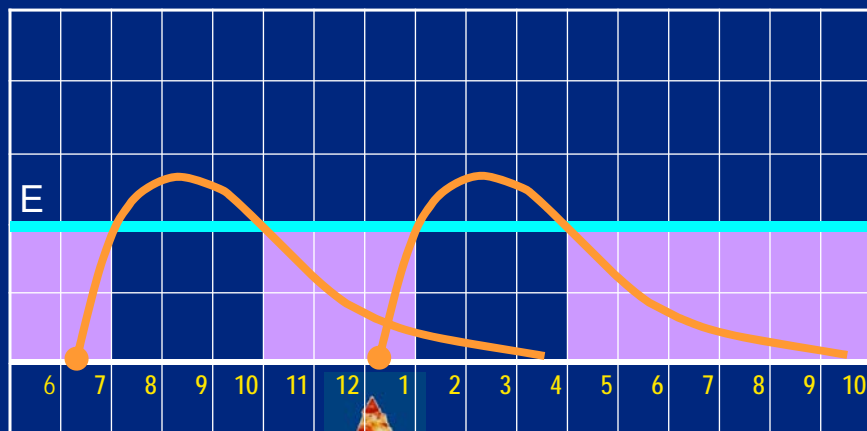
NOT LONG ENOUGH



SO GIVE MORE ?



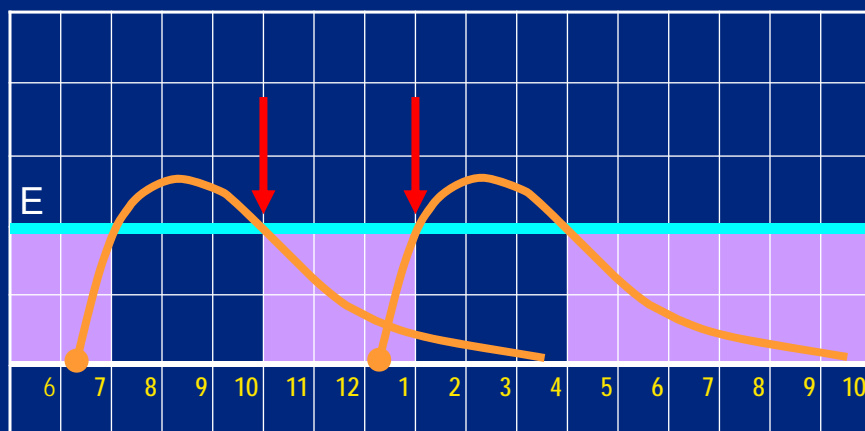
PLAN B - ALL TOO COMMON



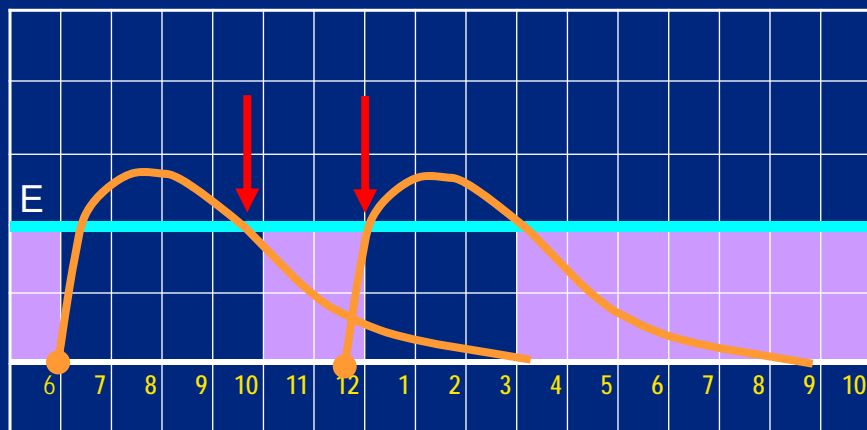
ALL TOO COMMON



PLAN B - MIDDAY GAP

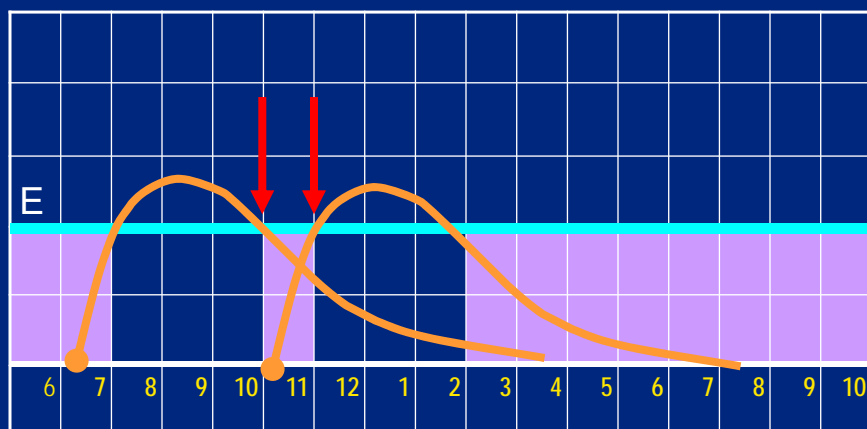


GAP CURE? - FAIL !



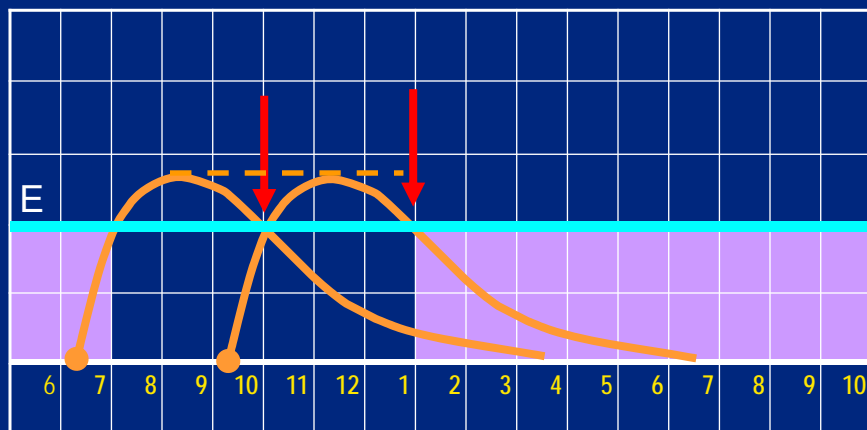
Center for
Attention
& Learning

GAP CURE? - FAIL !

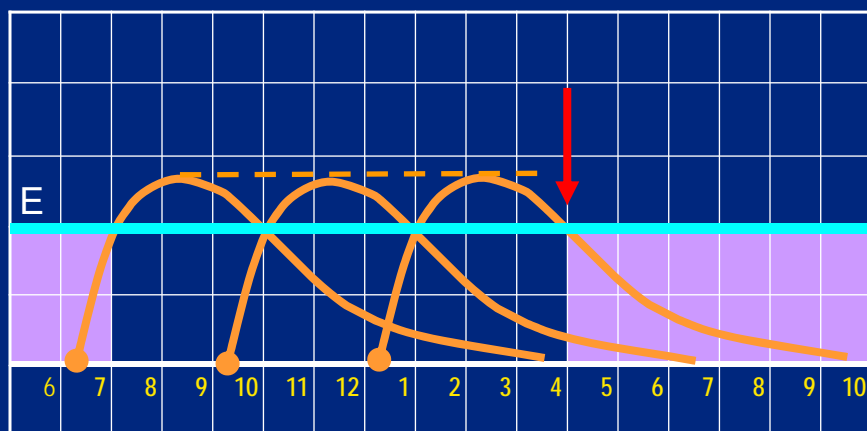


Center for
Attention
& Learning

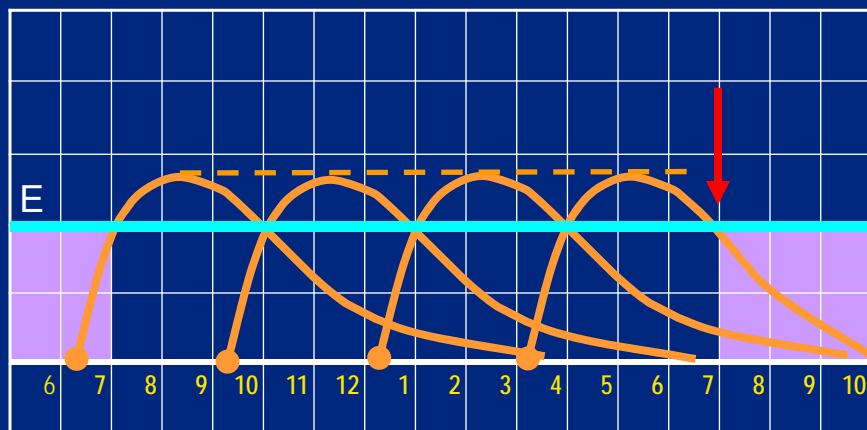
GAP CURE ... but ...



GAP CURE ... better, but ...

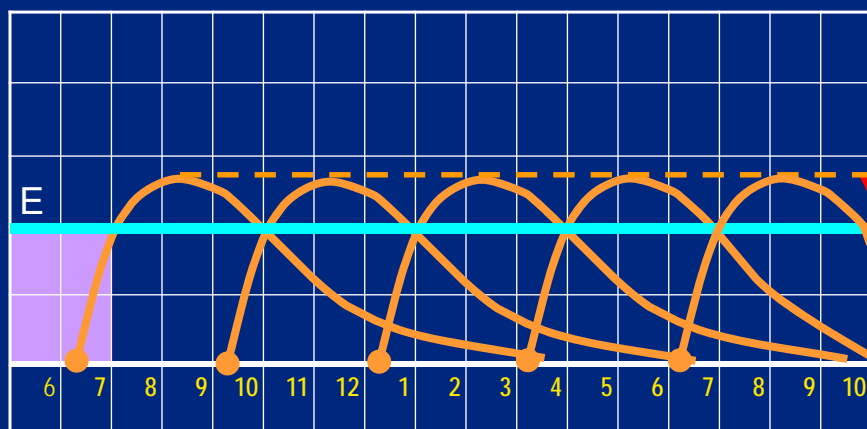


GAP CURE . . . *betterer, but . . .*



Center for
Attention
& Learning

NEW PROBLEM . . .



Center for
Attention
& Learning

METHYLPHENIDATE



METHYLPHENIDATE - *The Early Years*

- 1955 – Ritalin®
- 1982 – Ritalin SR® discontinued
- 1999 – Metadate ER®
- 2000 – Concerta®
- 2001 – Metadate CD®
- 2001 – Focalin®
- 2002 – Ritalin LA®
- 2002 – Methylin® IR liquid & chewable tabs
- 2005 – Focalin XR®
- 2006 – Daytrana® patch

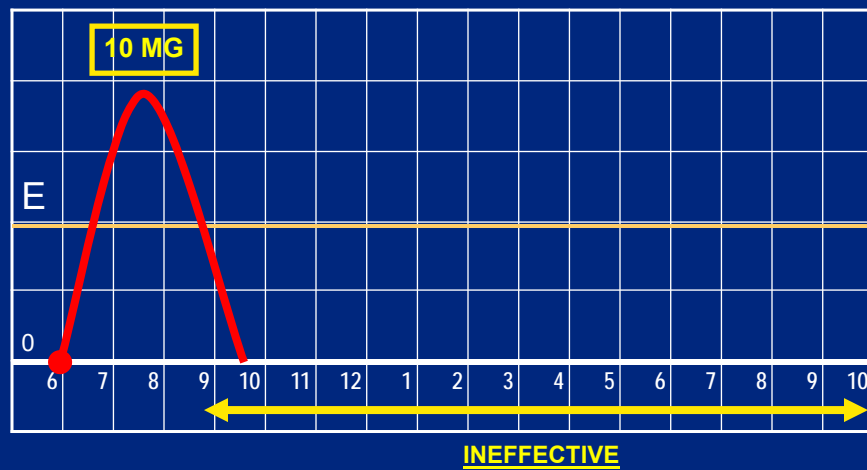


METHYLPHENIDATE - *The Recent Years*

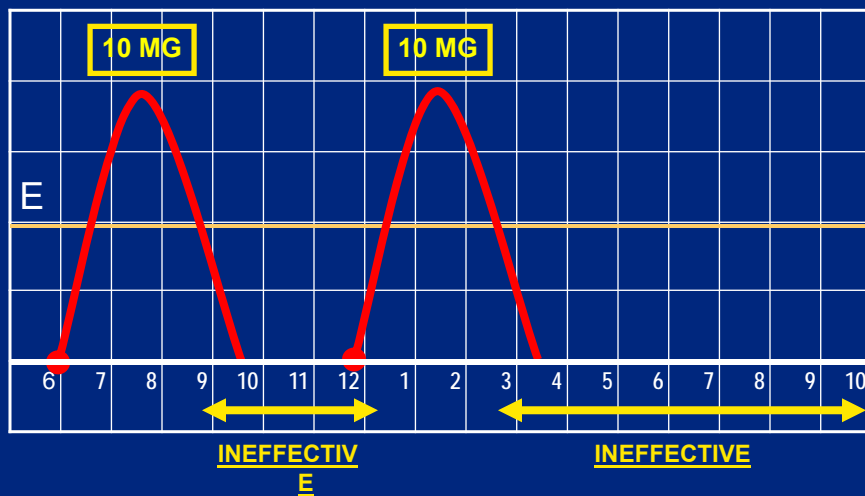
- 2012 – Quillivant XR® liq
- 2015 – Aptensio XR® cap
- 2015 – QuilliChew ER® tab
- 2017 – Cotempla XR-ODT orally dissolving



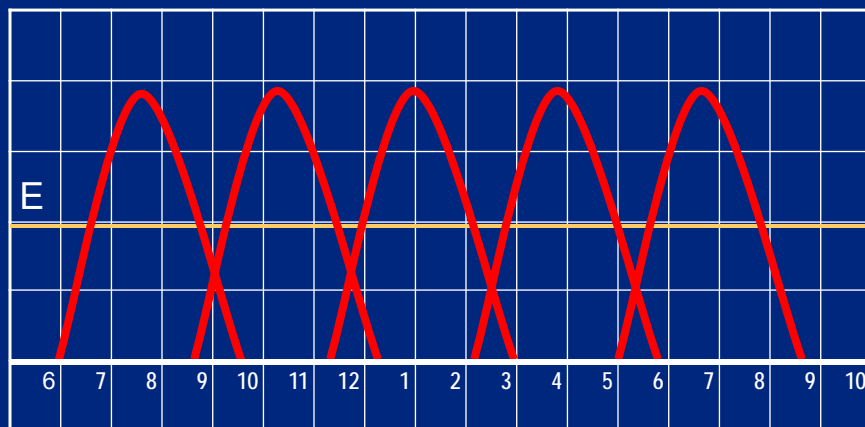
METHYLPHENIDATE IR – 10 mg



METHYLPHENIDATE IR – 10 mg



METHYLPHENIDATE IR – 10 mg

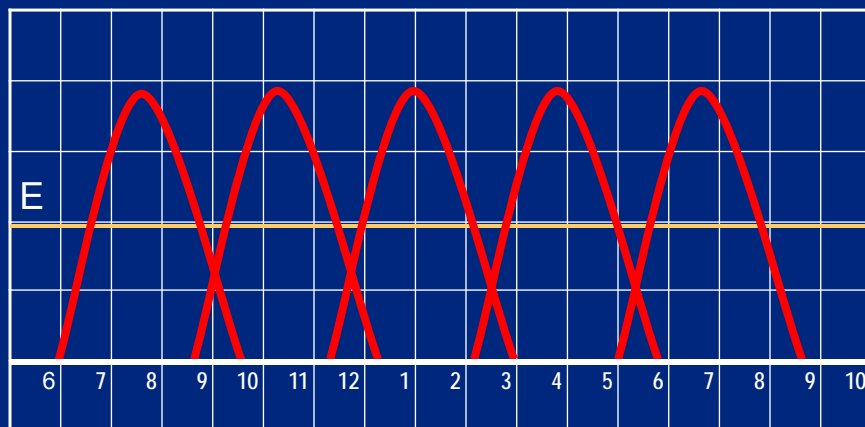




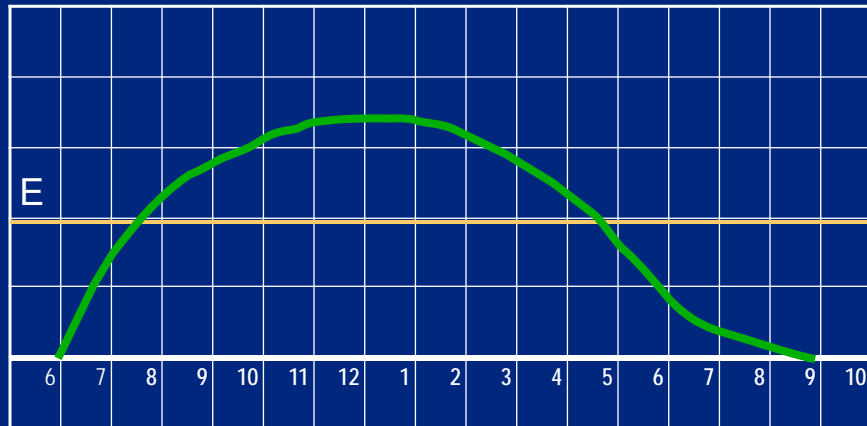
TEXAS LIMOUSINE



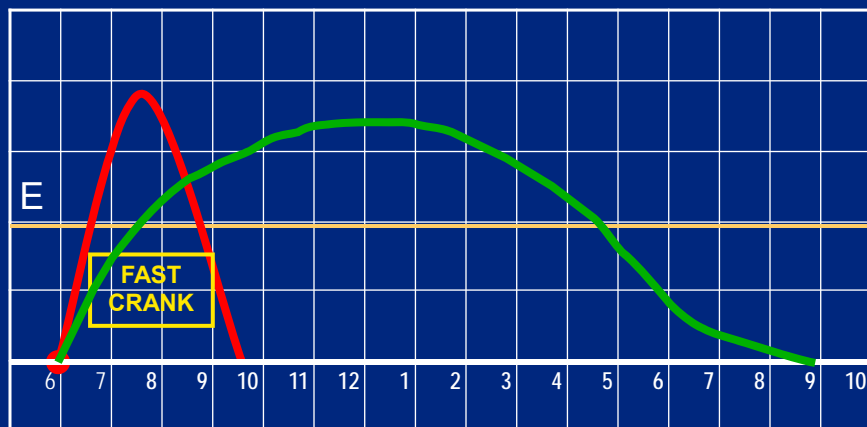
METHYLPHENIDATE IR – 10 mg



GENERAL LONG-ACTING CURVE

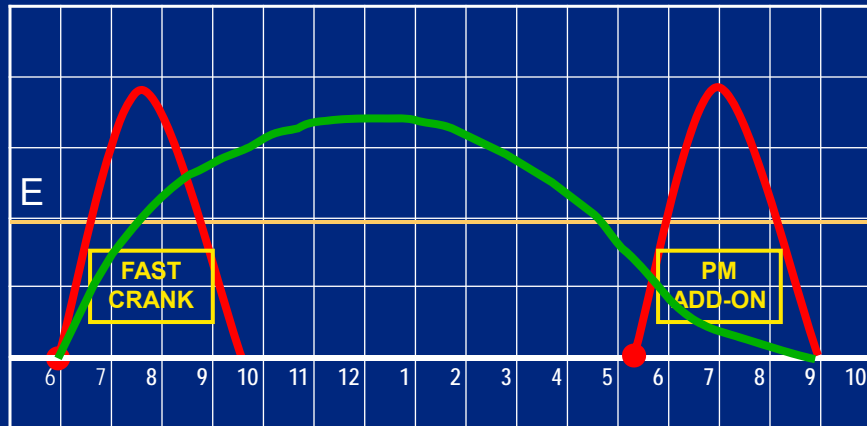


METHYLPHENIDATE IR Useful for Short Treatment Periods



METHYLPHENIDATE IR

Useful for Short Treatment Periods



DELIVERY SYSTEMS



IMMEDIATE - RELEASE DELIVERY SYSTEM

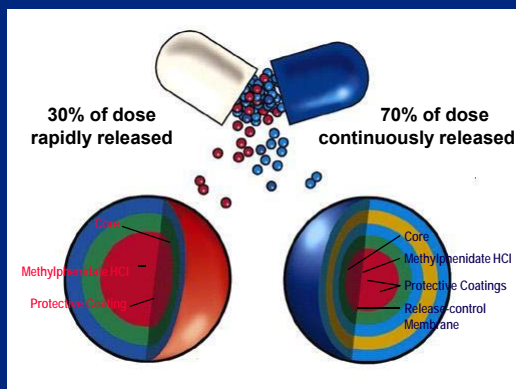


EXTENDED - RELEASE DELIVERY SYSTEM



Metadate® CD Delivery System

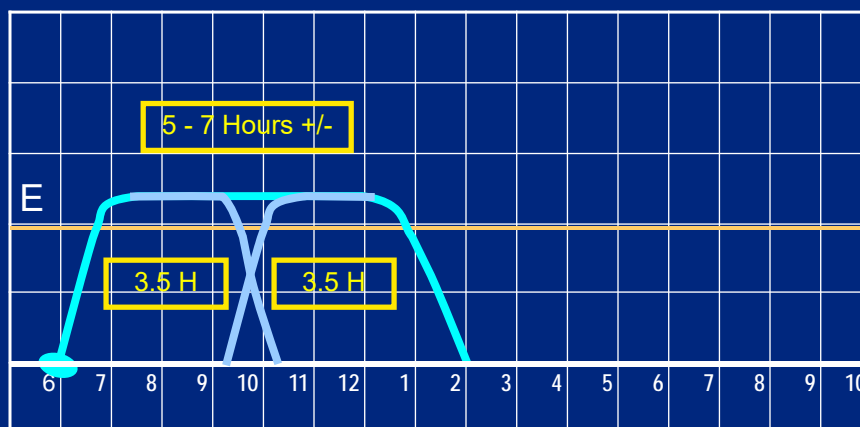
30% - Rapid Release (IR)
70% - Continuous Release (ER)



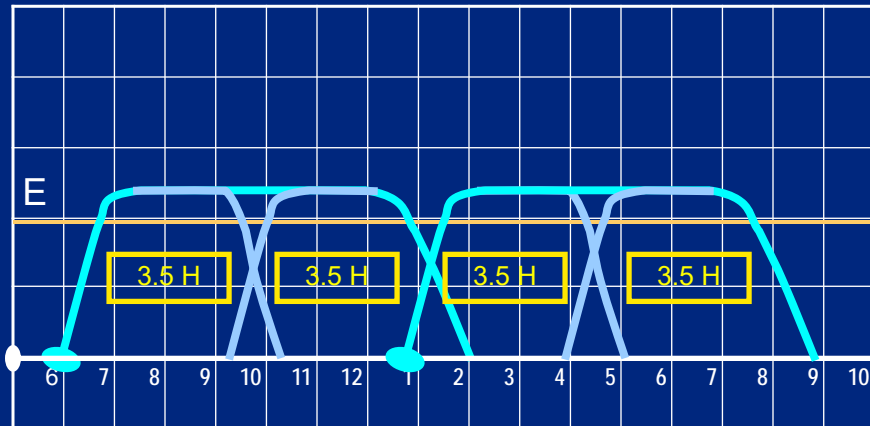
Beads shown are not actual sizes
 Metadate is a registered trademark of Celtech Pharma, Ltd.



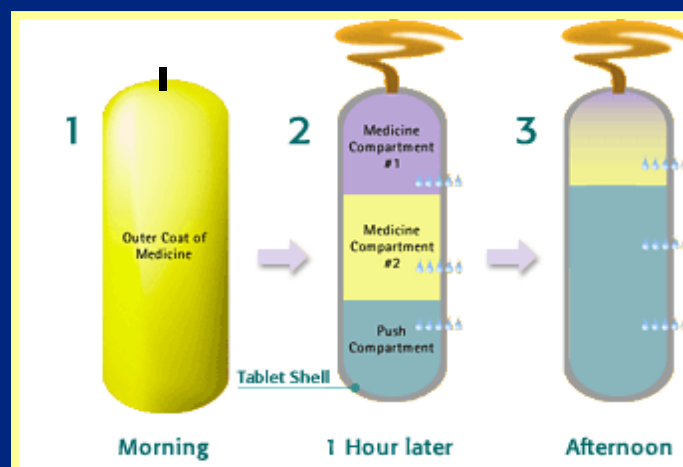
2-PHASE SYSTEM - 1X



2-PHASE SYSTEM - 2X

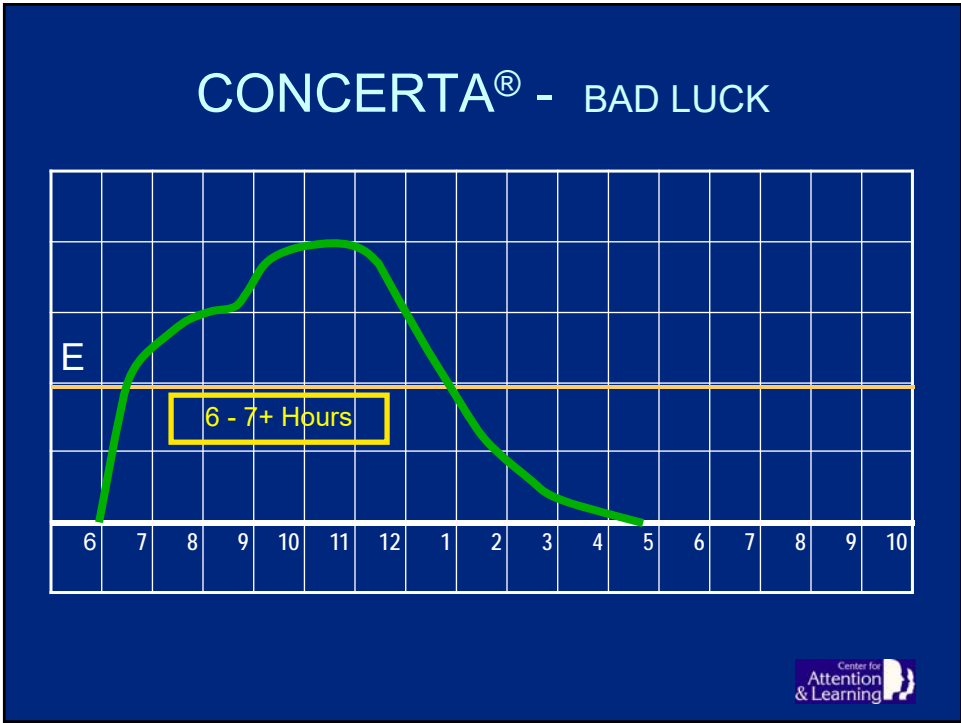
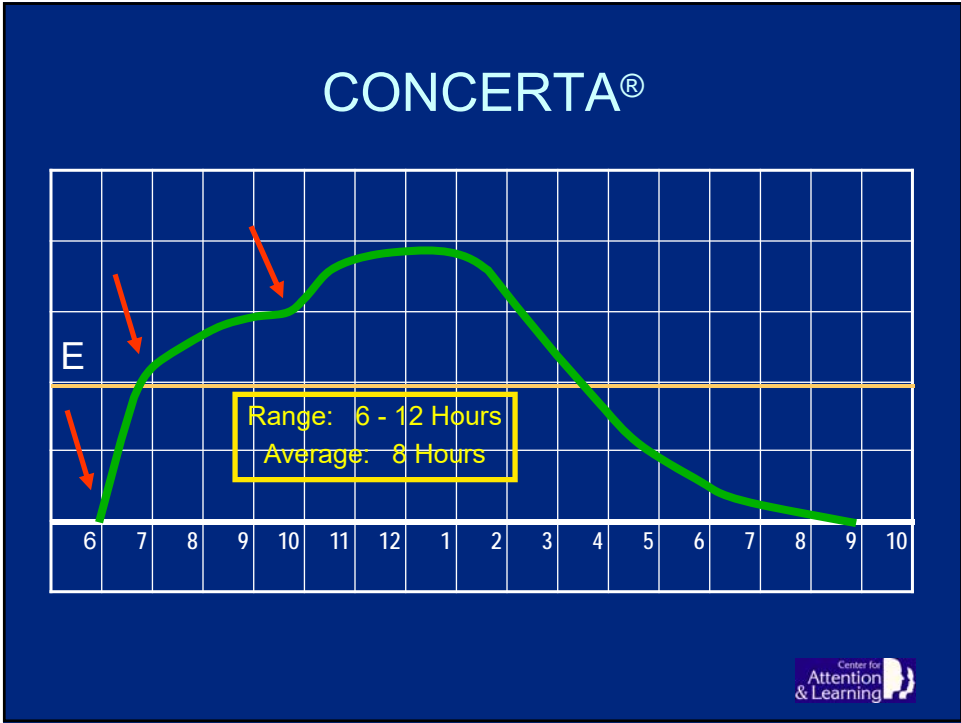


CONCERTA[®] - Delivery System

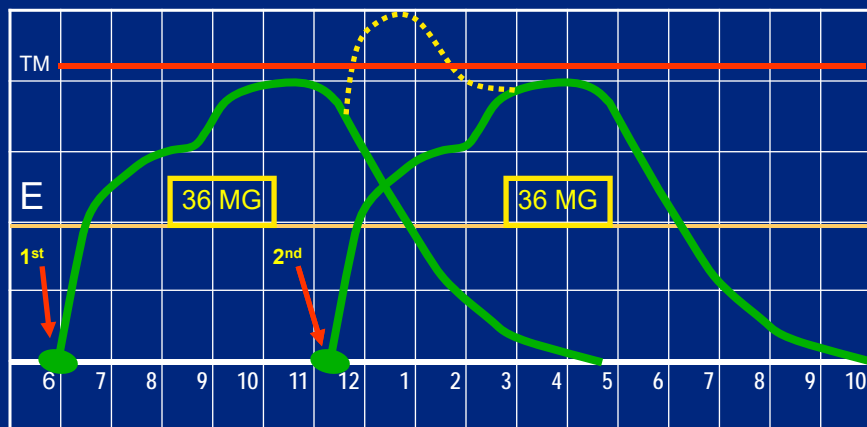


©Janssen Pharmaceuticals, Inc.





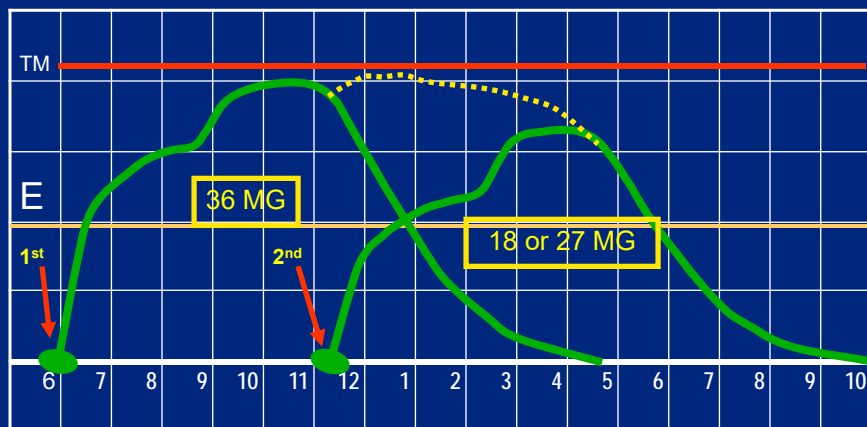
CONCERTA® 2X



BUMPY DAY

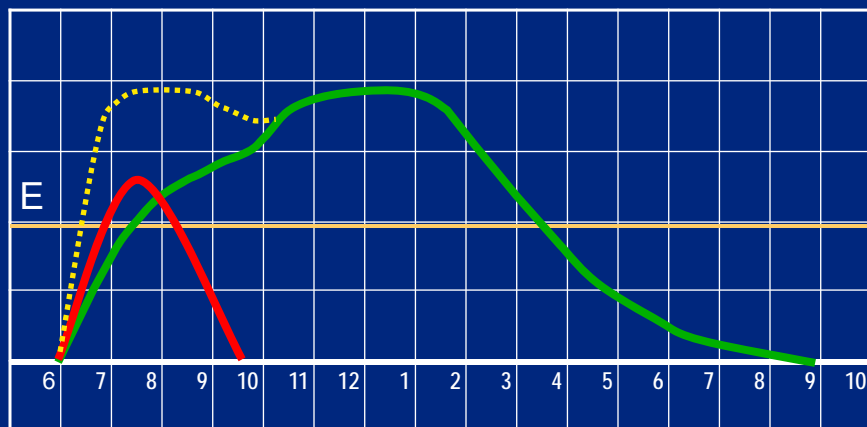


CONCERTA® 2X



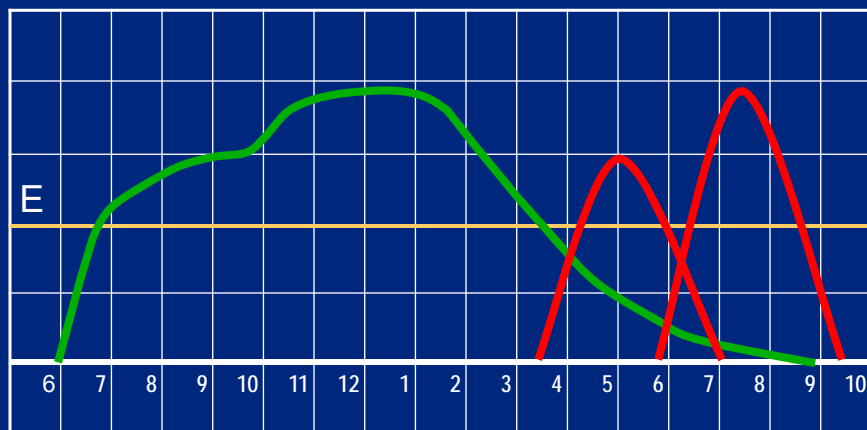
Center for Attention & Learning

CONCERTA® + MPD-IR BOOST

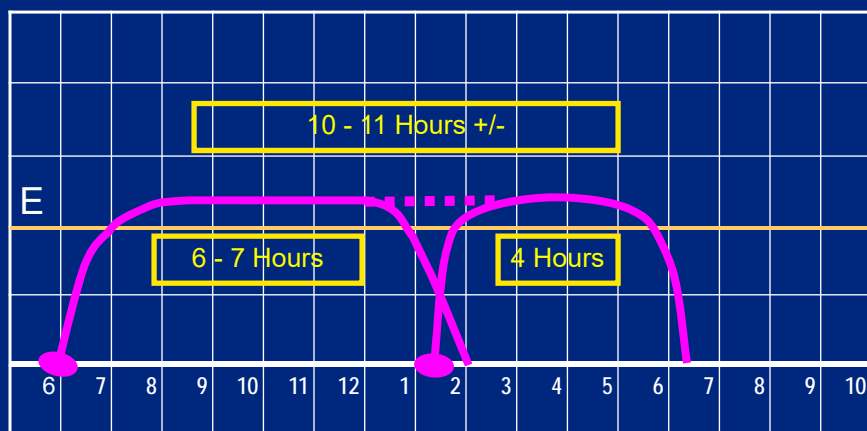


Center for Attention & Learning

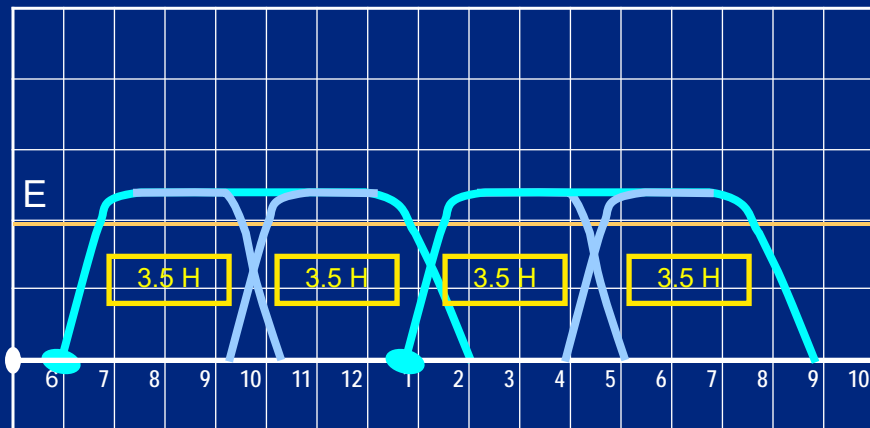
CONCERTA[®] + MPD-IR - PM 2X



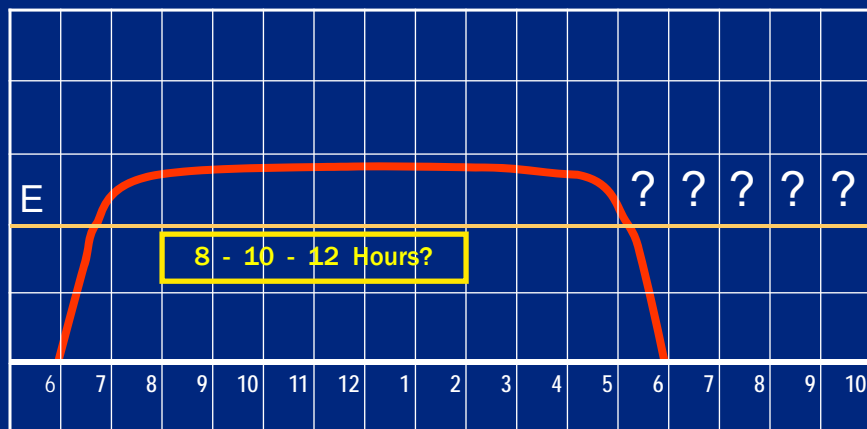
MID-RANGE + SHORT



2-PHASE SYSTEM - 2X



LONG-ACTING PRODUCT



DAYTRANA® PATCH

“Ritalin Patch”

- 4 patch sizes - \$13/patch/day
- Not adult indicated
- Hold to hip x 30 seconds
- Slow to crank - 2 hours
- Only ADHD Rx must remember to start and stop!
- Must remember to remove at 9 hrs
 - Then remains 3 hours - problem for sleep-sensitive patients
- Beware:
 - Waistbands, water, contact sports, application difficulties, impatience, heat, forgetfulness, skin irritation
- Irritated skin absorbs more*
- Contact sensitization is rare, but: be aware that if it happens, it may preclude oral MPD treatment -- for life.



AMPHETAMINES



AMPHETAMINES - *The Early Years*

- 1887 - Amphetamine **synthesized in Germany**
- 1893 - Methamphetamine synthesized
- 1932 - Benzedrex® **OTC amphetamine inhaler** – till 1959
- 1935 - Methamphetamine study #1
- 1937 - Benzedrine for headaches - Chas. Bradley, MD*
- 1937 - Dexedrine® **marketed by SKF** – fatigue, etc
- 1940 - Dextroamphetamine **in WWII** – ‘go pills’
- 1942 - Benzedrine® **ADHD study #1 published** – Bradley
- 1950 – Marketing explosion – not for ADHD



AMPHETAMINES – *The Later Years*

- 1960 - Obetrol® - dex + meth
- 1976 - Dexedrine Spansules® - **1st E-R ADHD Rx**
- 1994 - Obetrol® - meth removed, reformulated as MSA
- 1996 - Adderall - Obetrol renamed. **approved for ADHD**
- 2001 - Adderall XR® - **1st good ER system**
- 2007 - Vyvanse® - **very long acting**, approved for ADHD



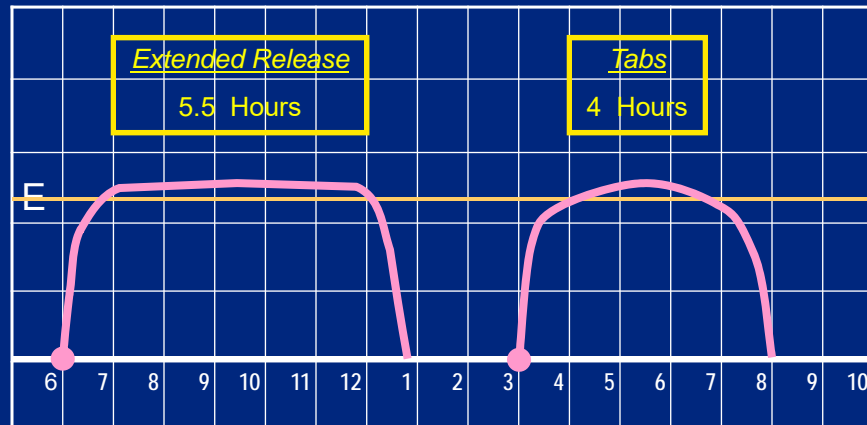
AMPHETAMINES – *The Recent Years*

- 2013 - ProCentra® - dex IR liquid
- 2015 - Vyvanse® - new approval for Binge Eating Disorder
- 2015 - Evekeo® - the return of Benzedrine®
- 2015 - Zenzedi® - dex tabs
- 2015 - Dyanavel XR® - dex time-release liquid
- 2016 - Adzenys XR-ODT® - orally dissolving tablet
- 2017 - Mydayis® - 3-phase capsule

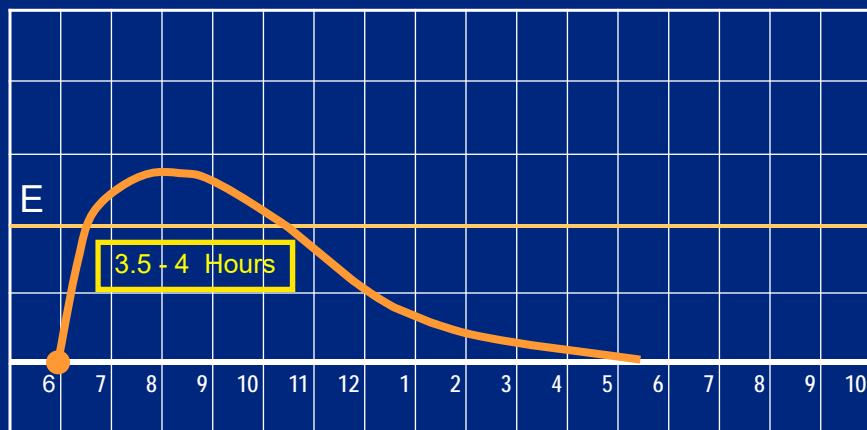


DEXTROAMPHETAMINE

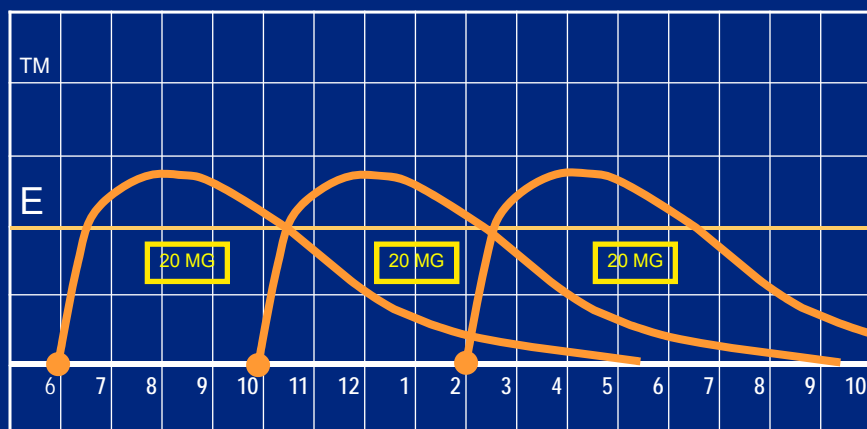
Dextroamphetamine Tabs - 2.5-30 mg
Dextroamphetamine ER - 5, 10, 15 mg



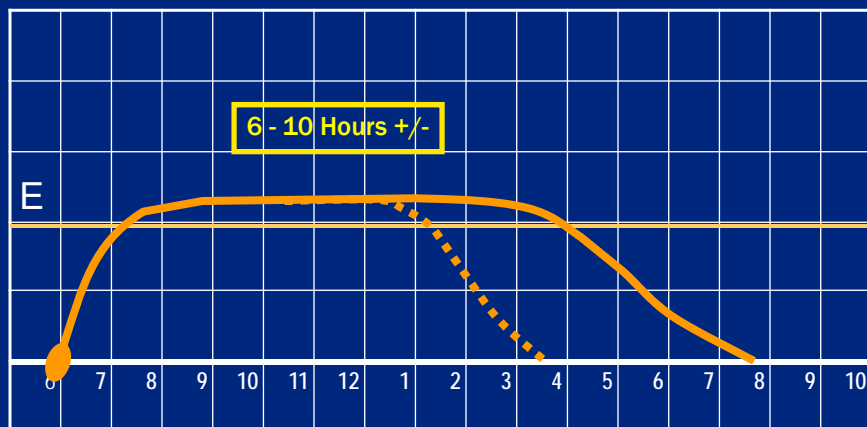
ADD-ER-ALL® TABS 1X



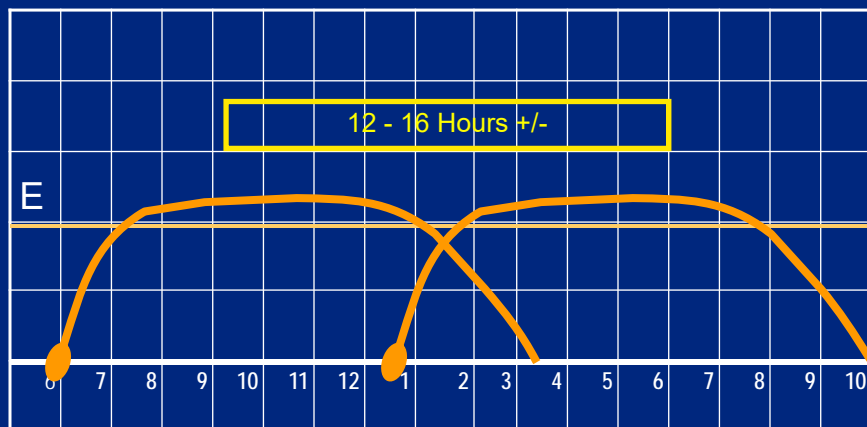
ADDERALL® TABS 3X



ADDERALL XR® 1X



ADDERALL XR® 2X

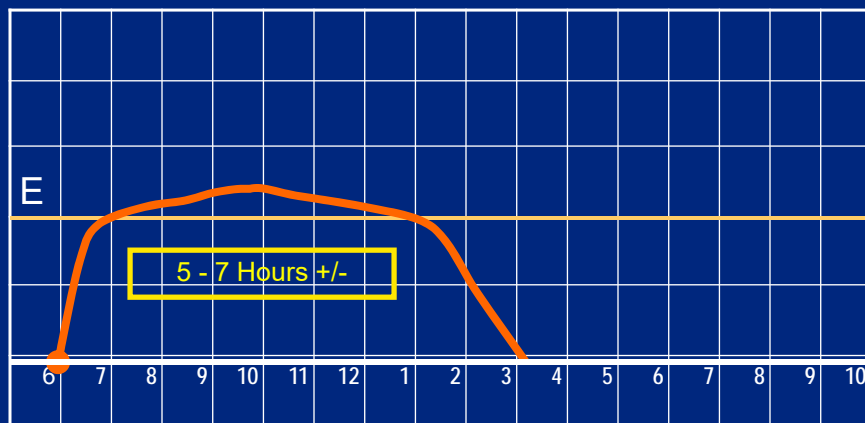


COMMON STIMULANT DOSING & DURATION

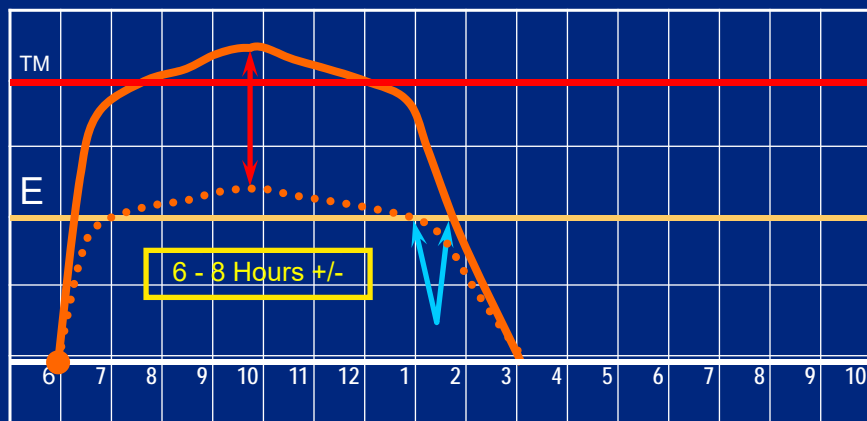
INCREASING THE DOSE
OF MOST STIMULANTS
INCREASES THE CONCENTRATION --
NOT THE DURATION



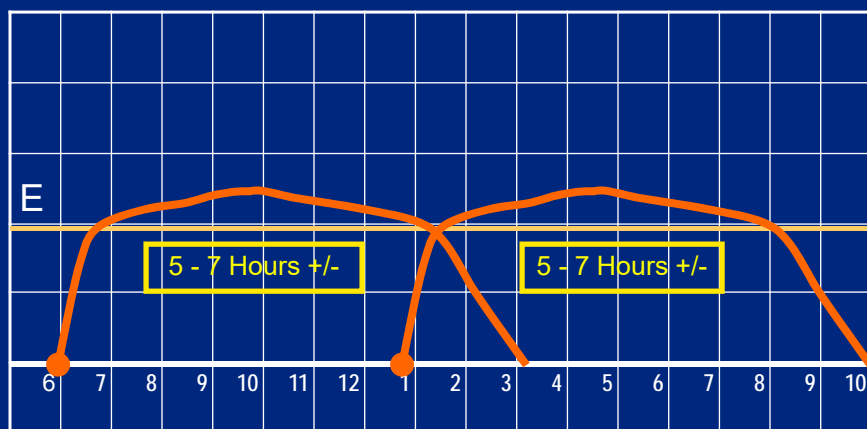
MPD ER – 20 mg 1X



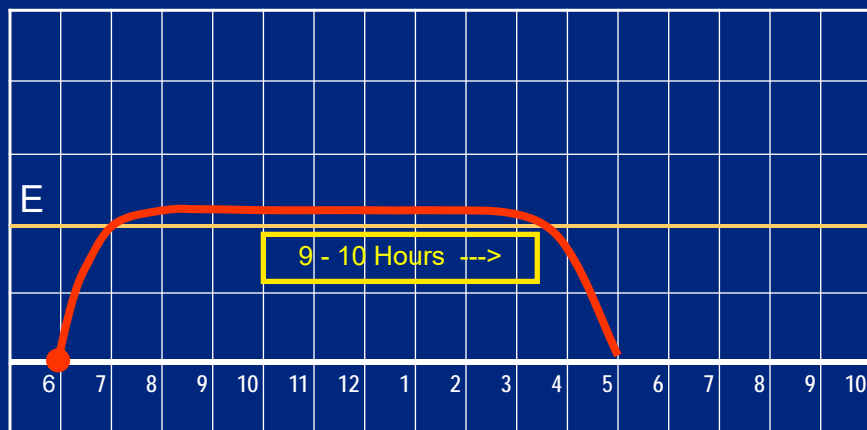
MPD ER – 40 mg 1X



MPD ER – 20 mg 2X

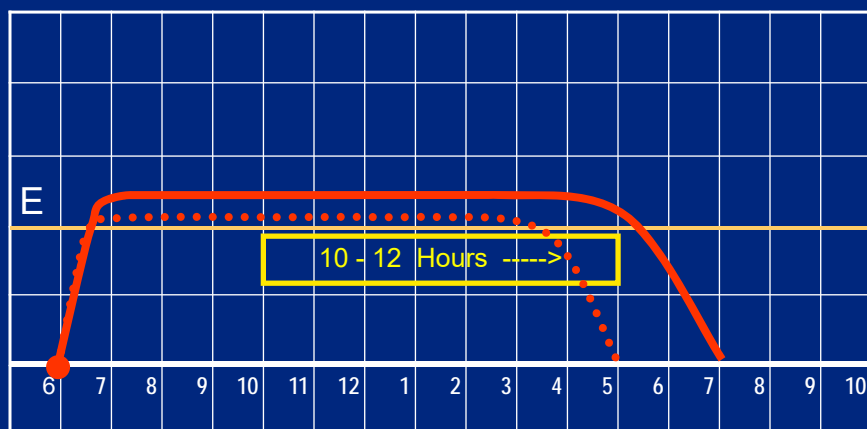


VYVANSE® 30 mg



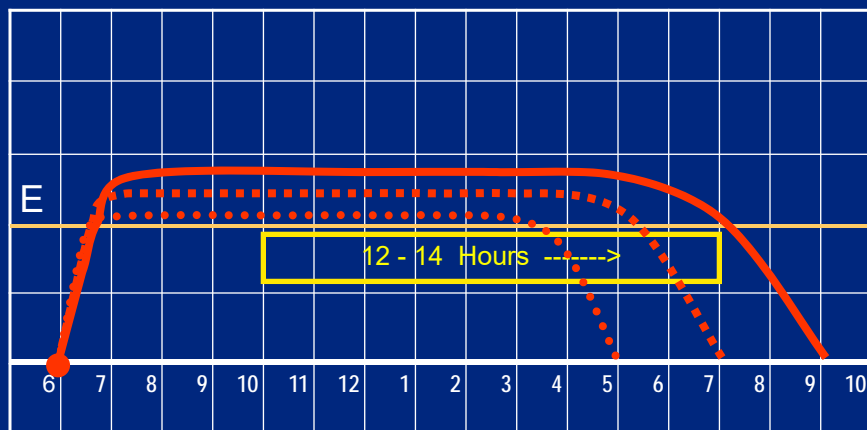
Center for
Attention
& Learning

VYVANSE® 40 mg



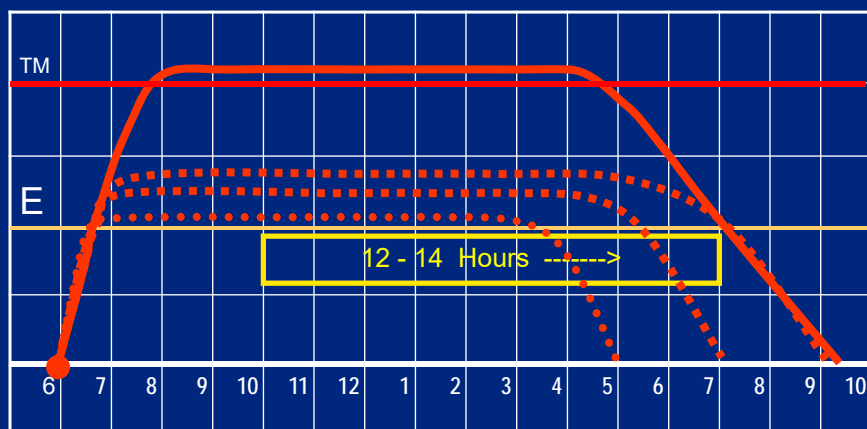
Center for
Attention
& Learning

VYVANSE® 50 mg



Center for
Attention
& Learning

VYVANSE® 60 mg



Center for
Attention
& Learning

STIMULANT DOSING

PRACTICAL BUT NONSTANDARD PROCESS FOR STIMULANT DOSING

*This must be done with thoughtful discussion
and physician direction.*

The patient doesn't know what 'normal' is!

- Go up carefully until it doesn't feel right
- Drop down one notch
- That's frequently the best dose
- If then it's not good enough, change the drug!
- Even if it *seems* fine, it's OK to try a change!



STIMULANT DOSING

Insufficient dosages
and durations of dosing
mislead everyone involved
- *teachers, spouses, bosses, doctors* -
and the patient -
to think maximum potential
has been reached!



ADHD MEDS

*“I take my pill,
but my life doesn’t seem
to be getting any better.”*



TREATMENT SUCCESS

Bailey’s 1st Law:

*SUCCESS IS PROPORTIONAL TO
THE PERCENTAGE OF LIFE TREATED WELL*

•



TREATMENT SUCCESS

Bailey's 1st Law:

*SUCCESS IS PROPORTIONAL TO
THE PERCENTAGE OF LIFE TREATED WELL*

- Treat 7 days a week
- Treat from arising
- Treat as close to bedtime as practical
- Treat weekends, holidays, breaks, & summers
 - *Drug holidays hurt you, not help you*
- Keep level constant through the day
- Use long-acting meds whenever possible
- Combine products and even different drugs if needed



- ADHD MEDS 101 -

*For Home, School, &
Work*



- ADHD MEDS -
Use Your Brain All Day



- YOU MAY REJOICE -





Mrkq#1#Edh | #M1#P G

P relh/#Daledp d

584#6750776

DGKG #dgg#Jhōwng#F rggLwqv#q#F k.guhq# #Dgxow

zzz FDOr:P relhfrp

dgggrfC ehōvrxw.kjhw

