


Behavior management and psychopharmacology
in children with autism spectrum disorders


James Coplan, MD
Neurodevelopmental Pediatrics of the Main Line
Rosemont, PA
info@drcoplan.com
www.drcoplan.com
(610) 520-2130


4/12/2012

www.drcoplan.com

Disclosures

- Dr. Coplan is author of *Making Sense of Autistic Spectrum Disorders: Create the brightest future for your child with the best treatment options* (Bantam-Dell, 2010), and receives royalties on its sale



- This presentation will include a discussion of off-label drug use

www.drcoplan.com

www.drcoplan.com



Welcome

James Coplan, MD
-Internationally recognized clinician, author, and public speaker in the fields of early child development, early language development and autistic spectrum disorders.





April 11-14, 2012
Dr. Coplan has been selected to present at the 2012 CEC (Council for Exception Children) Annual Convention & Expo held in Denver, CO from April 11th- 14th, 2012. More...



Outline

- **Definitions**
- **Behavioral Interventions**
- **Neuropsychological Deficits**
- **Pharmacologic Interventions**
- **Summary**

Maladaptive Behavior

- **Externalizing**
- **Internalizing**

www.drcoplan.com

Disruptive (“Externalizing”) Behavior

- Tantrums
- Property Destruction
- Aggression towards others
- Self-injurious behavior (SIB)

www.drcoplan.com

“Internalizing” Behavior

- Anxiety
- Depression
- Obsessiveness / Rigidity
- Perfectionism

www.drcoplan.com

**Social Functions of
Externalizing Behavior**

- Attention
- Access to a preferred object
- Escape from a task

www.drcoplan.com

The ABC's of Behavior Analysis

- What is the Antecedent?
- What is the Behavior?
- What is the Consequence?

www.drcoplan.com

Antecedents

- **External (Social)**
 - Imposition of a task
 - Change in routine
 - Denial of access to object or activity
 - Other....
- **Internal (Biological)**
 - Hunger, Thirst, Pain, etc.
 - Neuropsychological abnormalities

www.drcoplan.com

Consequences

- **Reinforcers (↑ likelihood of recurrence)**
 - Positive (add something)
 - Attention
 - Access
 - Negative (remove something)
 - Escape
- **Aversives (↓ likelihood of recurrence)**

www.drcoplan.com

Food Selectivity

Positive and Negative Reinforcement of unwanted behavior

- Parent removes non-preferred food (negative reinforcement)
- Parent provides child with his/her preferred food (positive reinforcement)
- Alternatives
 - First Then
 - Put refusal on extinction
 - The kitchen is *closed* between meals
 - Desensitization (non-preferred food is on table, on plate, touch, lick, mouth, eat)

www.drcoplan.com

Consequences 2: Aversives

- Aversives lead to a *decrease* in the likelihood of recurrence of the antecedent behavior
- Logical Consequences
 - If child refuses to use toilet, child must carry backpack with spare clothes, when family is in public
- Over-correction
 - Must wash out soiled diaper
 - If the child spills milk on purpose: child must mop the entire kitchen floor

www.drcoplan.com

Disruptive Behavior: Function & Best Response

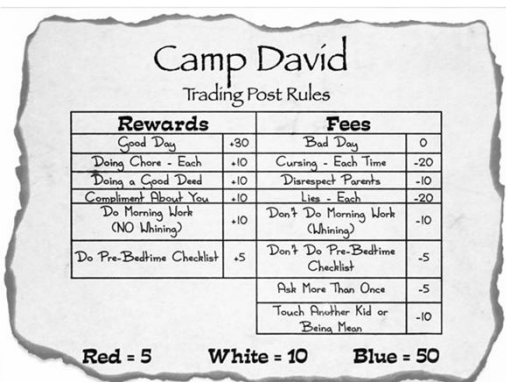
- Attention
 - 1-2-3 ➡ "Time Out"
- Access
 - Never grant access to desired object in response to disruptive behavior
- Escape
 - Never permit the child to terminate a task with disruptive behavior. Walk child through task first, *then* ➡ Time Out.

www.drcoplan.com

Token Economy: The next step beyond Time Out

- **Concretely specified behaviors**
- **Earn and Lose Points (Tokens)**
- **Points ➡ Access to specified reward**
 - Reward determined by child's interests
 - Preferred toys, Computer time, etc.
 - NO access to reward at other times
 - "Extra" treats not as effective
- **Works with children who understand rule-based play (CandyLand, Uno, etc.)**

www.drcoplan.com



Camp David
Trading Post Rules

Rewards		Fees	
Good Day	+30	Bad Day	0
Doing Chore - Each	+10	Cursing - Each Time	-20
Doing a Good Deed	+10	Disrespect Parents	-10
Compliment About You	+10	Lies - Each	-20
Do Morning Work (NO Whining)	+10	Don't Do Morning Work (Whining)	-10
Do Pre-Bedtime Checklist	+5	Don't Do Pre-Bedtime Checklist	-5
		Ask More Than Once	-5
		Touch Another Kid or Being Mean	-10

Red = 5 White = 10 Blue = 50

www.drcoplan.com

But.....

Children with ASD have atypical responses to external stimuli

- *What good is Time Out if the child has no eye contact?*

Children with ASD have a range of abnormal, autonomous, internal stimuli

- *Obsessive behavior not the same as "ordinary" task refusal*

www.drcoplan.com

Neuropsychological Abnormalities in Children with ASD

Core Deficits

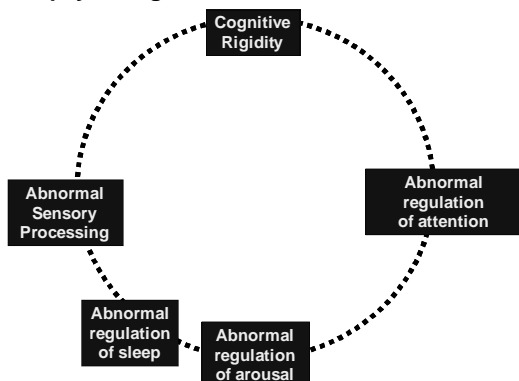
Cognitive Rigidity
Abnormal regulation of attention
Abnormal regulation of arousal
Abnormal regulation of sleep
Abnormal sensory processing

www.drcoplan.com

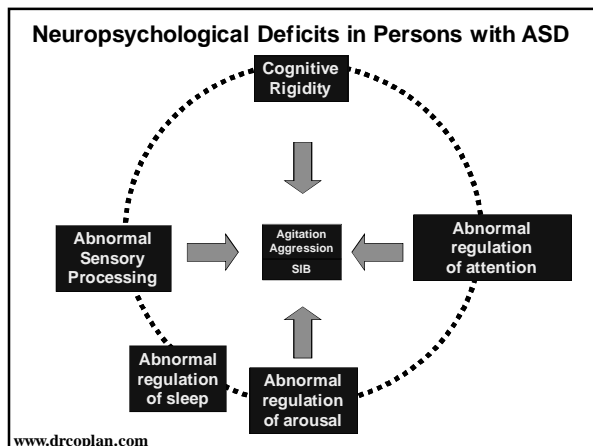


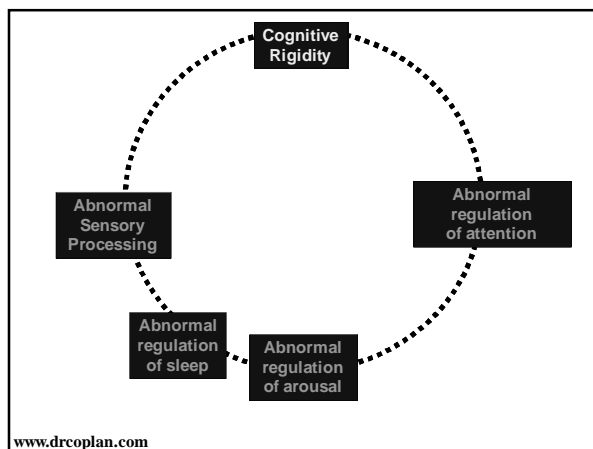
www.drcoplan.com

Neuropsychological Deficits in Persons with ASD



www.drcoplan.com

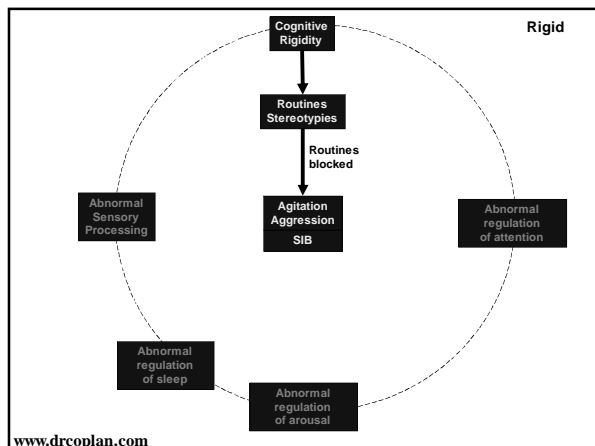




Cognitive Rigidity

- ***Insistently*** repetitious behavior
- Problems with changes in routine, transitions, unmet expectations
- Perfectionism
- (Anxiety)
- (Depression)

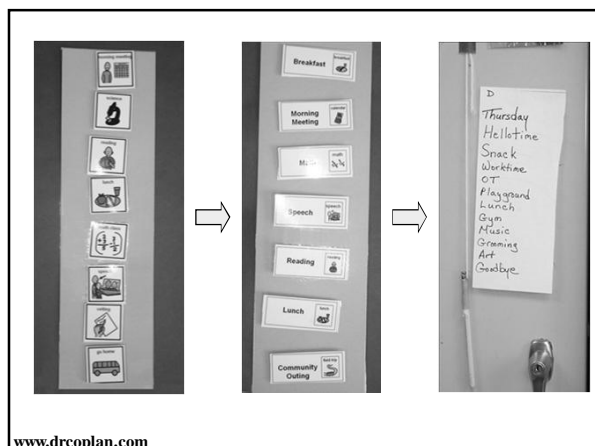
www.drcoplan.com

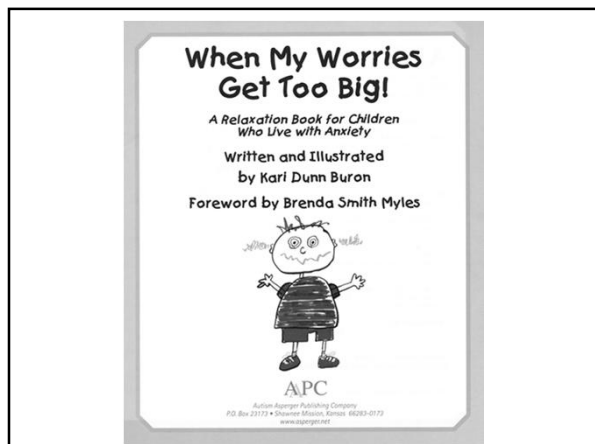


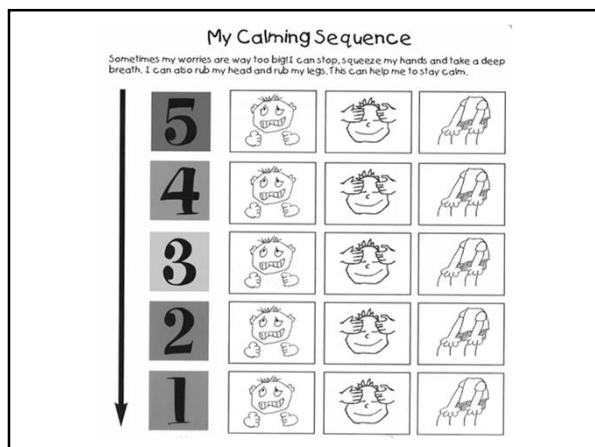
Cognitive Rigidity

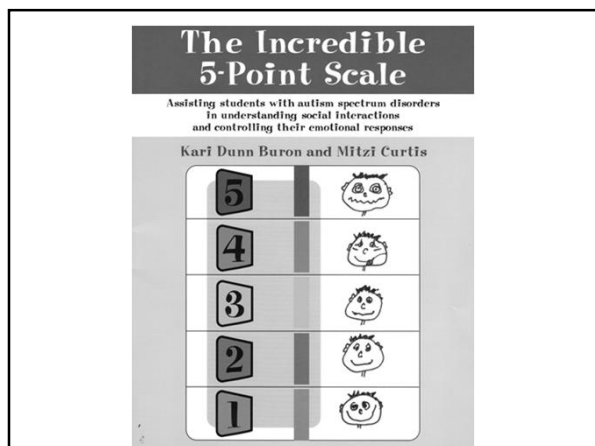
- **Interventions**
 - **Visual Schedules**
 - What am I supposed to be doing *do now?*
 - What am I supposed to do *next?*
 - “Oops” cards
 - **Relaxation Techniques**
 - Fidget toys, Deep Breathing, Isometrics
 - “Break” cards
 - **SSRIs**

www.drcoplan.com





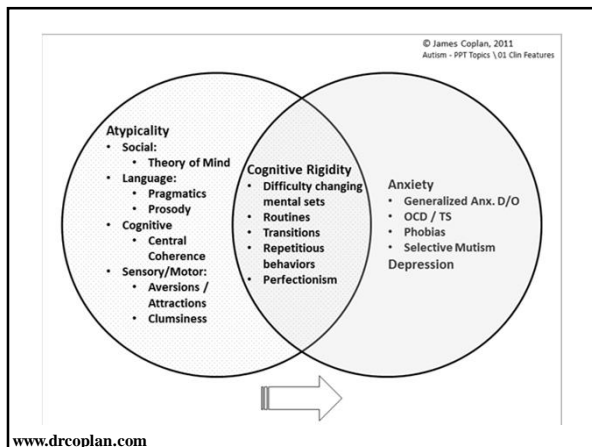




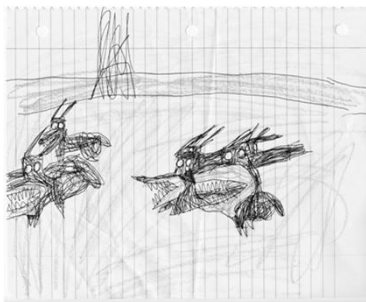
Cognitive Rigidity

- ***Insistently*** repetitious behavior
- Problems with changes in routine, transitions, unmet expectations
- Perfectionism
- (Anxiety)
- (Depression)

www.drcoplan.com

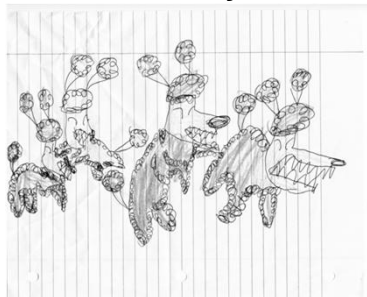


Anxiety



RD. 7 y.o. F, nl IQ, PDD-NOS & Anxiety. Father: GAD
www.drcoplan.com MRN: 07-0427

Anxiety



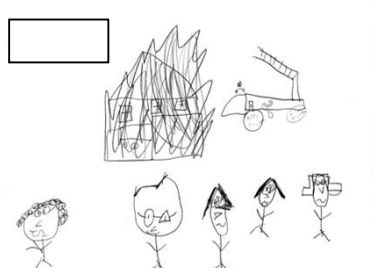
RD. 7 y.o. F, nl IQ, PDD-NOS & Anxiety. Father: GAD
www.drcoplan.com MRN: 07-0427

Anxiety

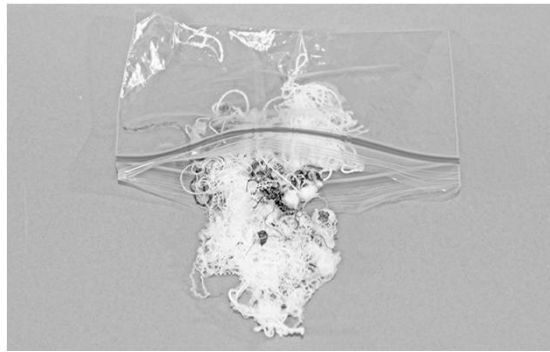


RD. 7 y.o. F, nl IQ, PDD-NOS & Anxiety. Father: GAD
www.drcoplan.com MRN: 07-0427

Anxiety



"The house is on fire and we are running for our life."
www.drcoplan.com A.W.: 9 year old boy with PDD-NOS and normal IQ (MRN 11-07710)

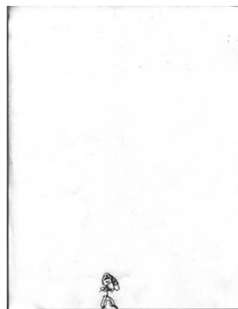


Joseph F: 15 y.o. boy Asperger Syndrome & chronic anxiety

MRN: 05-0096

www.drcoplan.com

Depression



www.drcoplan.com KO; 10 yr old female, PDD-NOS, normal IQ

Selective Serotonin Reuptake Inhibitors (SSRIs) in ASDs

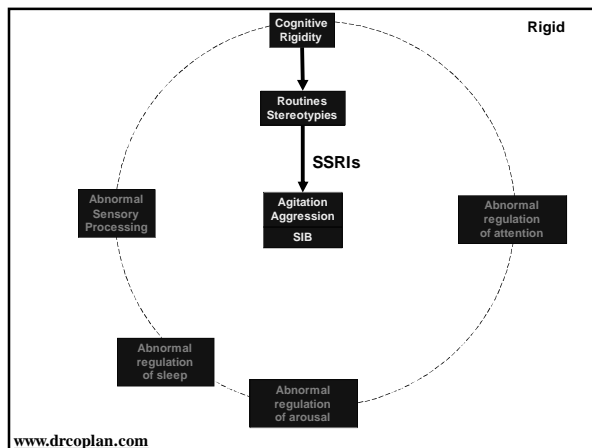
• Primary targets

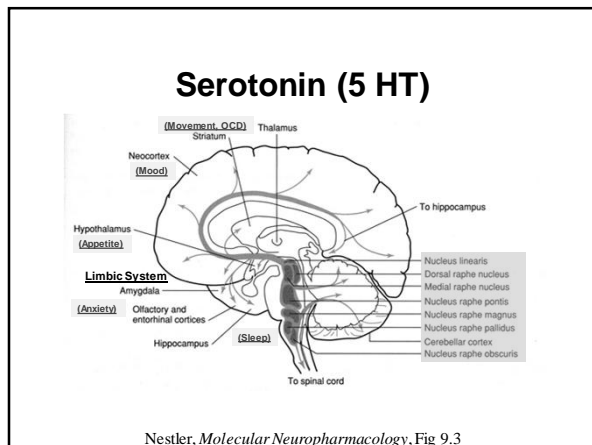
- Cognitive Rigidity
 - Anxiety
 - Obsessive / Perfectionistic behavior
- Depression
- Stereotypies: Probably not

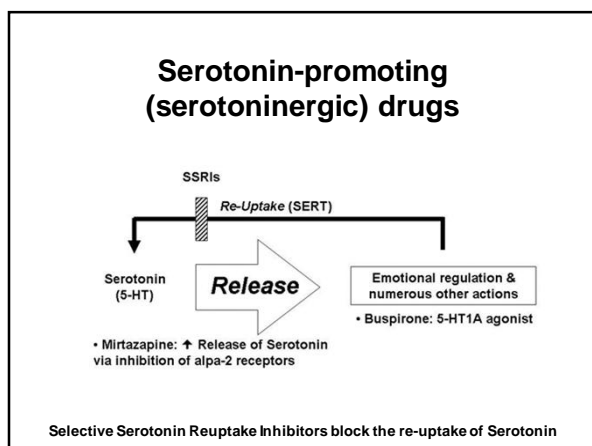
• “Downstream” benefit:

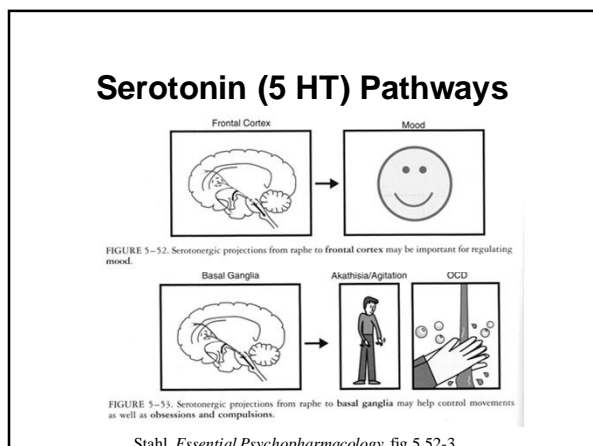
- ↓ Disruptive Behavior
- ↑ Quality of Life

www.drcoplan.com









Pharmacotherapy for anxiety disorders in children and adolescents ★

Ipser JC, Stein DJ, Hawkrigge S, Hoppe L. Cochrane Database of Systematic Reviews 2009, Issue 3.

- **Studies reviewed: 22 RCTs/ 2,519 participants**
 - Short-term (average 11 wks)
 - Mean age 12 yrs
 - **Drugs studied (versus placebo)**
 - SSRIs :15 (fluoxetine 6, fluvoxamine 2, paroxetine 3, sertraline 4)
 - SNRIs: 5, (clomipramine 3), venlafaxine 2)
 - Benzodiazepines: 2: (alprazolam 1, clonazepam 1)
 - Tricyclic antidepressants: 1 (desipramine)
- **Meta-analysis**
 - Response rate: Medication 59%; Placebo 31%
 - 7.3% of subjects treated with SSRIs withdrew bec/o side effects
 - "The overwhelming majority of evidence of efficacy was for the SSRIs, with the most evidence in paediatric OCD"

Anxiety

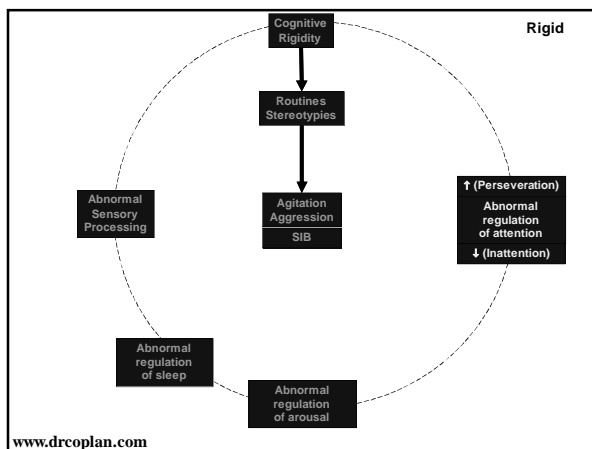
RD. 7 y.o. F, nl IQ, PDD-NOS & Anxiety. Father: GAD

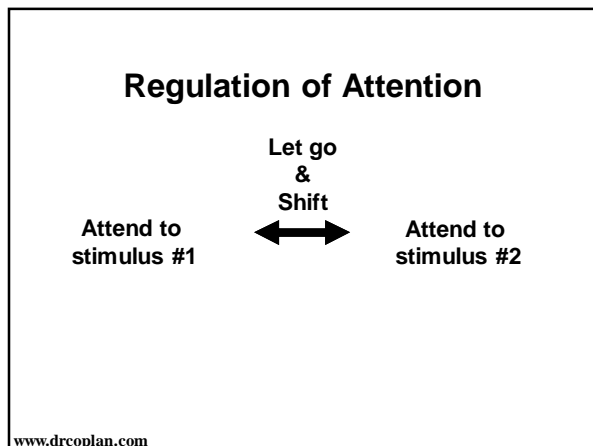
www.drcoplan.com MRN: 07-0427

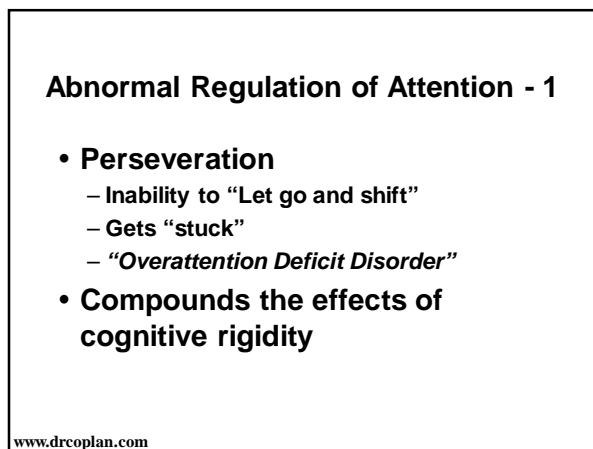
Anxiety after Rx with CBT & Escitalopram

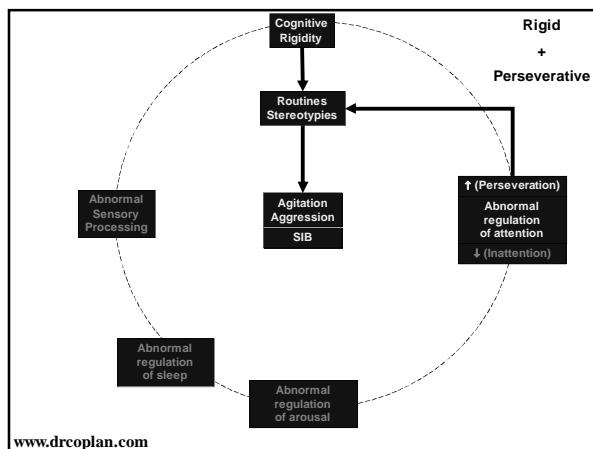


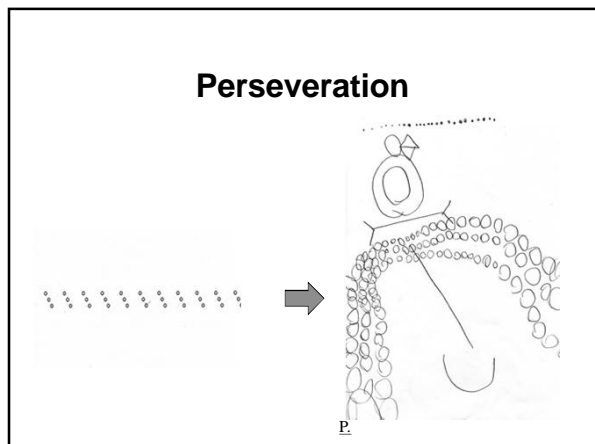
RD. 9 y.o. F, nl IQ, PDD-NOS & Anxiety. Father: GAD
www.drcoplan.com MRN: 07-0427

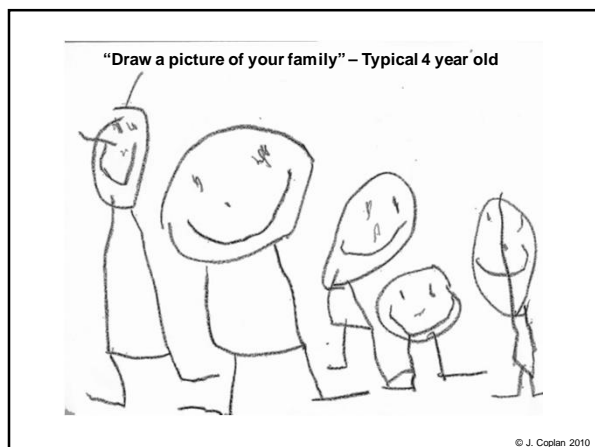












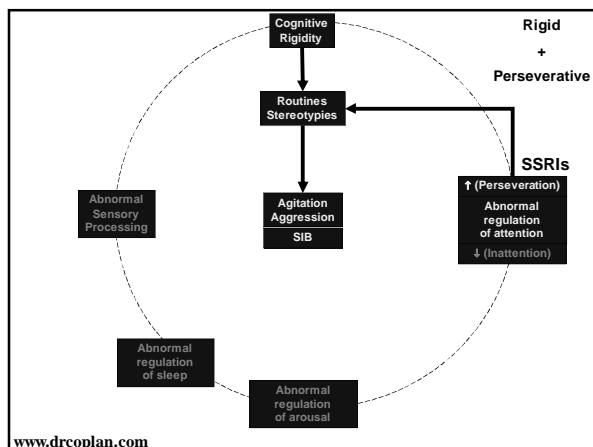


Abnormal Regulation of Attention (Perseveration)

- **Interventions**

- Verbal preparation for transitions
- Visual Schedules
- SSRIs (OCD: Proven; ASD: likely)

www.drcoplan.com



www.drcoplan.com

Abnormal Regulation of Attention - 2

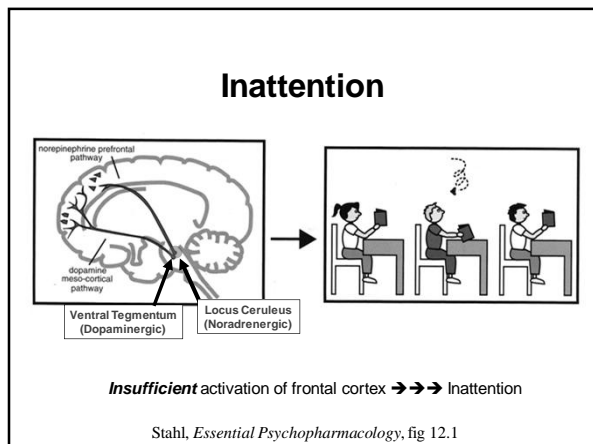
- **Inattention**

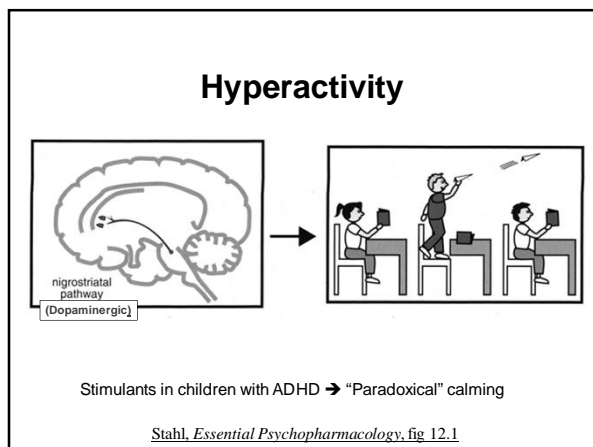
- Inability to focus
- Impulsive
- Distractible

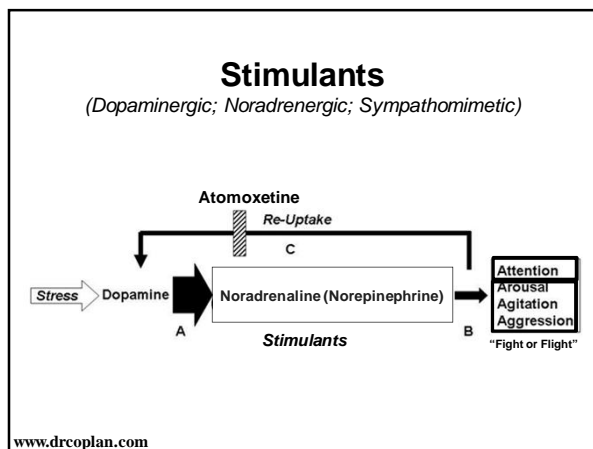
www.drcoplan.com











Stimulants, Norepinephrine Reuptake Inhibitors (NRI's)

Generic Name(s)	Brand Name(s)	Comment
Amphetamine		FDA Schedule II
Dextroamphetamine	Dexedrine, Dextrostat	FDA Schedule II
Dextroamphetamine + amphetamine	Adderall	FDA Schedule II
Methylphenidate	Concerta, Ritalin, Metadate	FDA Schedule II
Dexmethylphenidate	Focalin	FDA Schedule II
Atomoxetine, Attentin	Strattera	Norepinephrine reuptake inhibitor (NRI), not FDA Schedule II

www.drcoplan.com

Alpha-2 Agonists

Generic Name	Brand Name(s)	Comment
Clonidine	Catapres	More sedating than guanfacine
Guanfacine	Tenex, Intuniv	

- Frontal cortex / Locus Ceruleus: post-synaptic alpha-2 receptors
- Sympathetic outflow (autonomic nervous system): Pre-synaptic autoreceptors → ↓BP

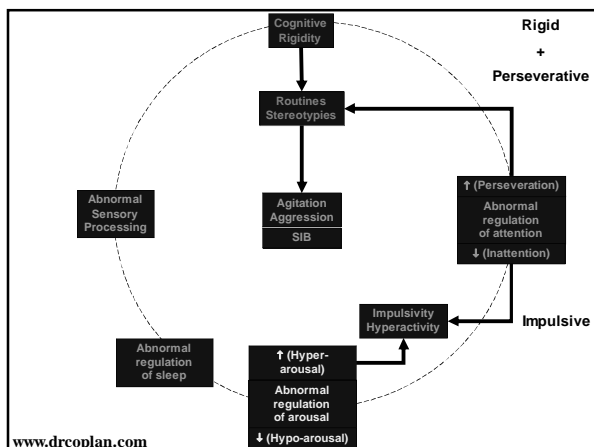
www.drcoplan.com

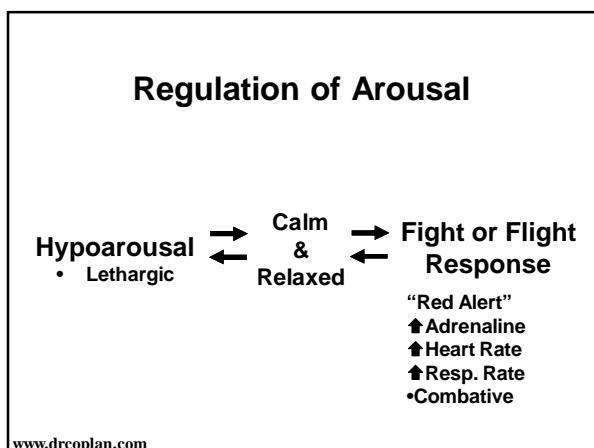
Clinical Pearl

- **Beware of anxiety or perseveration masquerading as inattention**
 - Perseveration on inner stimuli: “Inattentive”
 - Perfectionism: “Problems w. task completion”
 - Anxiety: “Rushes through work”

www.drcoplan.com



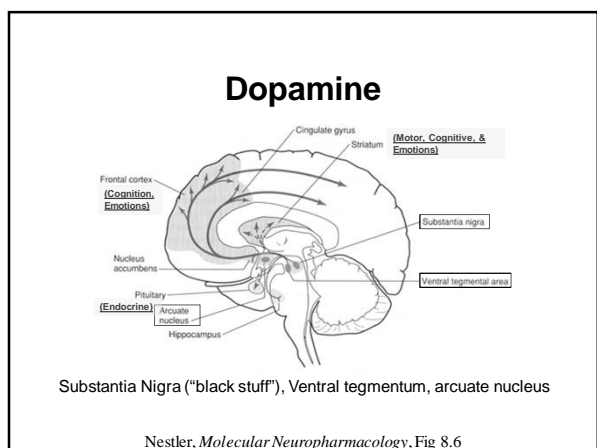
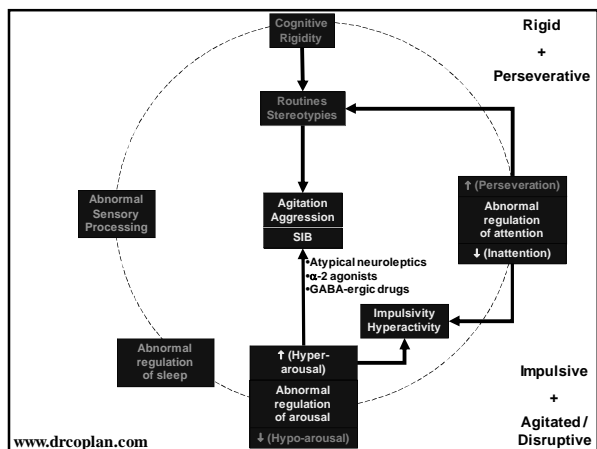


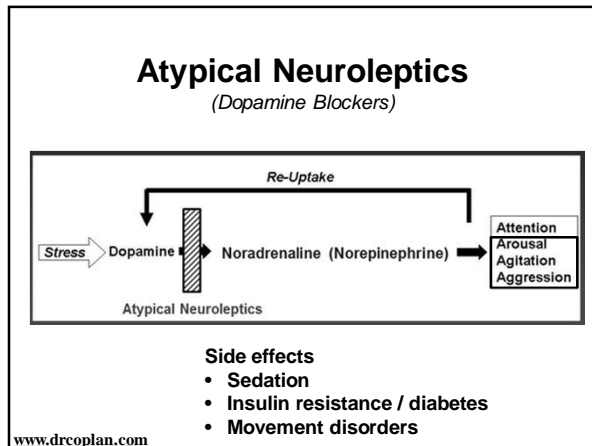


"He is so hard to calm down when he gets upset....His emotional thermostat doesn't work"

**Parent of an 8 year old with ASD
and a low arousal threshold**

F. O. MRN 06-0208

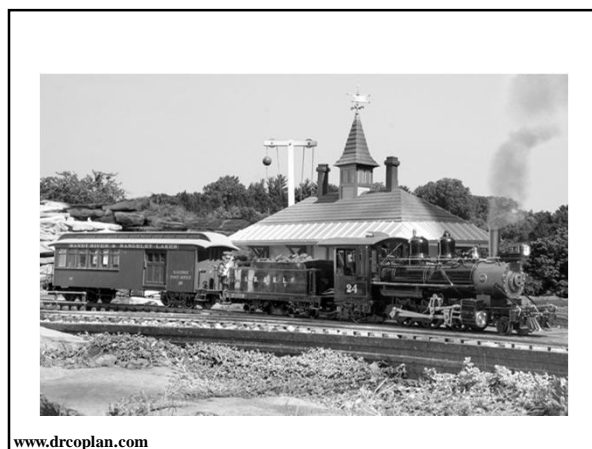


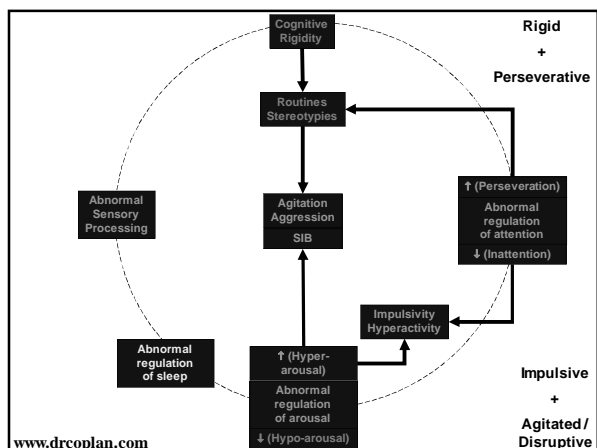


Atypical Neuroleptics

Generic Name	Brand Name	Comment
Aripiprazole	Abilify	<ul style="list-style-type: none"> • Relatively less risk of weight gain • FDA approved for Rx of ASD
Clozapine	Clozaril	<ul style="list-style-type: none"> • Bone marrow suppression
Olanzapine	Zyprexa	<ul style="list-style-type: none"> • Greater risk of weight gain
Quetiapine	Seroquel	<ul style="list-style-type: none"> • Greater sedation
Risperidone	Risperdal	<ul style="list-style-type: none"> • Greater risk of weight gain • FDA approved for Rx of ASD
Ziprazidone	Geodon	<ul style="list-style-type: none"> • Relatively less risk of weight gain

www.drcoplan.com





Regulation of Sleep - 1

- **Melatonin**
 - Brain hormone
 - ↓ Metabolic rate (Heart, Temp)
 - “You’re sleepy now”
- **Suppressed by light**
 - 24 hr cycle
 - Seasonal cycle

www.drcoplan.com

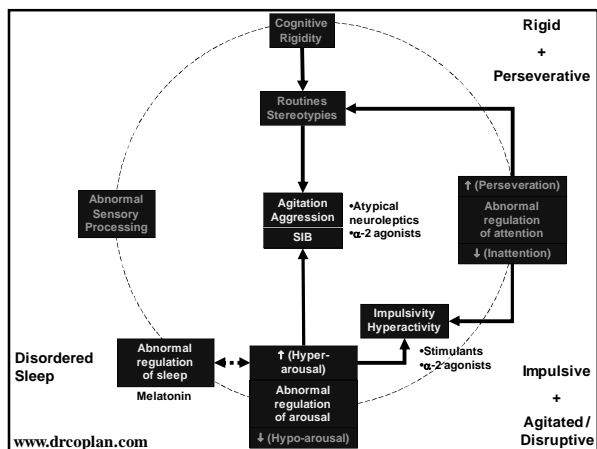
Regulation of Sleep - 2

- **Abnormal melatonin cycling**
 - Primary disorders of sleep
 - Blindness
 - ASD
- **Symptoms**
 - Delayed onset of sleep
 - Shortened duration / frequent waking

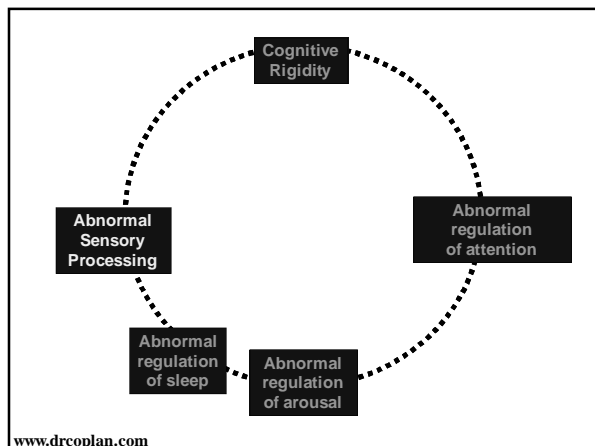
www.drcoplan.com

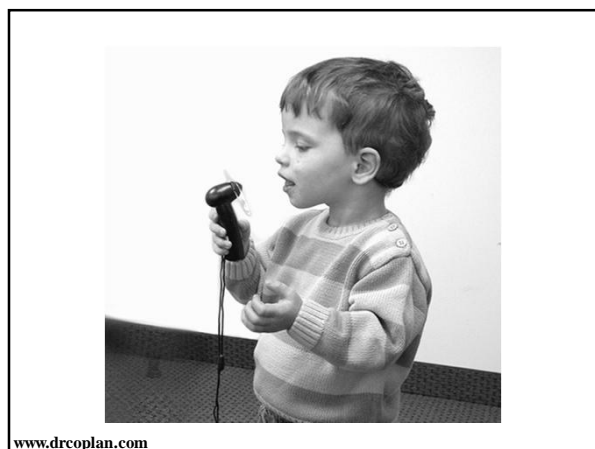
- **Shared genetic control**
 - Regulation of sleep
 - Regulation of arousal
- **Family history of sleep disorder**

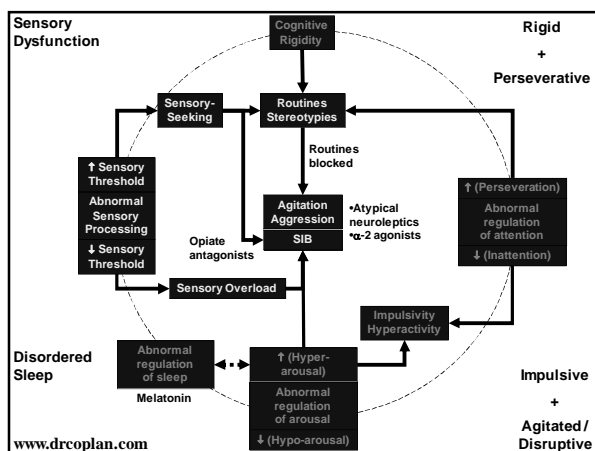
www.drcoplan.com



www.drcoplan.com



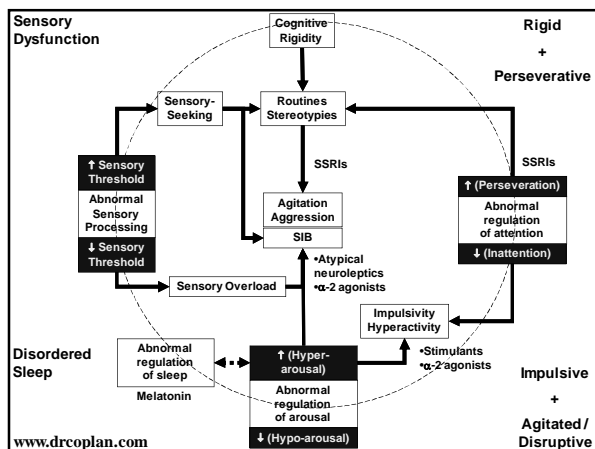




**The whole is greater than the
sum of its parts**

Max Wertheimer

www.drcoplan.com



www.drcoplan.com

Summary

- **Why this child?**
 - What is this child's developmental Level?
 - Is this stage-appropriate behavior?
 - Does the behavior serve a social function?
 - Escape, access, attention
 - Is the classroom placement appropriate?
 - Language level?
 - Does this behavior occur in other settings?
 - Family factors?
 - Parents consistent at home?
 - Parental psychopathology? (Anxiety, Depression, Alcohol)

www.drcoplan.com

Summary

- **Why this child?**
 - Neuropsychological factors?
 - Cognitive Rigidity
 - Dysregulation of attention
 - Dysregulation of arousal
 - Sensory Seeking / Sensory Overload
- **Behavioral Intervention – Usually**
- **Change in classroom setting – sometimes**
 - Shift from rote to inferential learning (2nd - 3rd grade): challenge
- **Medication: Sometimes**

www.drcoplan.com

An ounce of prevention....

- **Identify *internalizing* behaviors
before they lead to *externalizing*
behaviors**
 - Behavior Management Plan that proactively
seeks to avert or dissipate anxiety



Thank you

www.drcoplan.com

www.drcoplan.com



JAMES COPLAN, M.D., *Author and Speaker*
Making Sense of Autistic Spectrum Disorders



- Home
- About Dr. Coplan
- Making Sense of ASD
- ELM-2
- Other Publications
- Speaking Topics
- News & Views
- Site & Map
- Reviews
- Related Links
- Contact Dr. Coplan

Welcome

James Coplan, MD
Internationally recognized clinician, author, and public speaker in the fields of early child development, early language development and autistic spectrum disorders.





April 11-14, 2012
Dr. Coplan has been selected to present at the 2012 CEC (Council for Exception Children) Annual Convention & Expo held in Denver, CO from April 11th- 14th, 2012. More...
