

# PCIT and Autism:



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# PCIT & Autism: Research



# The Times, They Are A-Changin'

The pace of autism spectrum disorder research has increased dramatically in recent years.

- 2003: approximately 800 peer-reviewed journal ASD articles were published
- 2013: more than 3,400 ASD articles published



## **PCIT and ASD Research: Here's What We Got So Far**

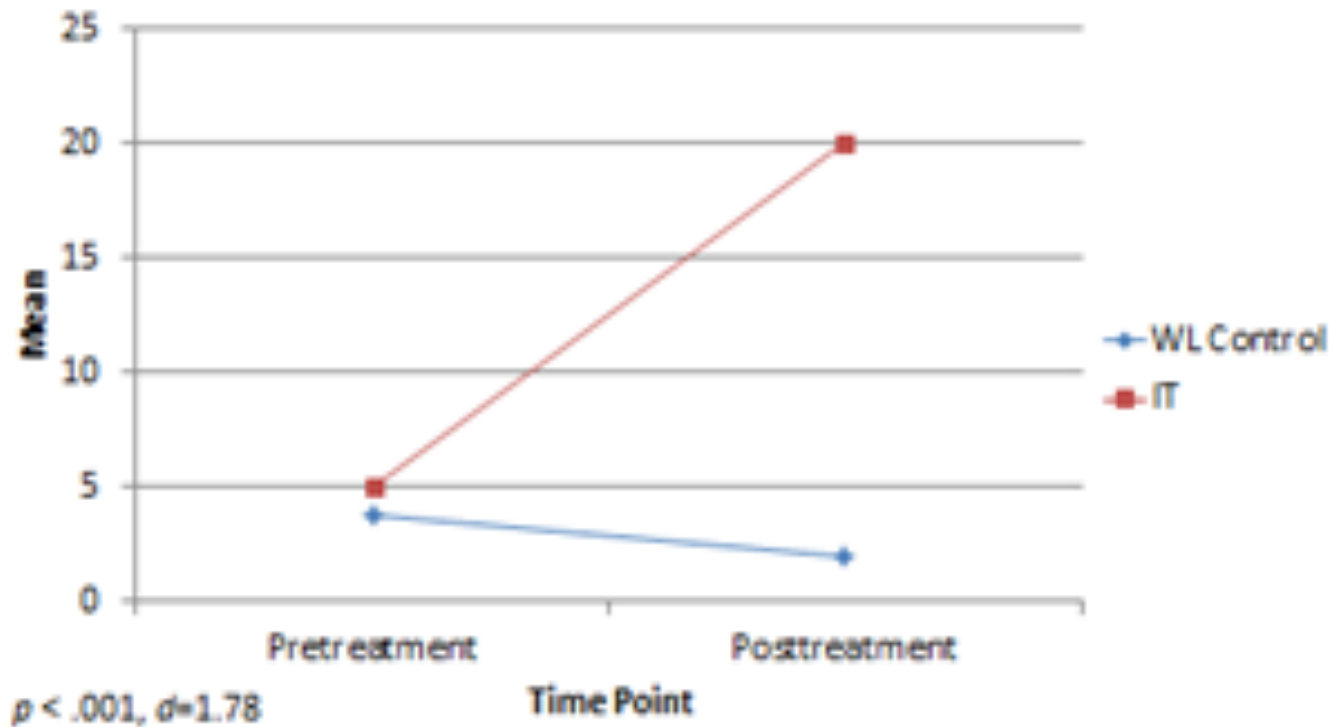


# Do The Parents Change?

- Use of more positive parenting skills
  - Agazzi, 2013; Armstrong & Kimonis, 2013; Ginn et al., 2015; Lesack et al., 2014; Masse et al., 2016
- Parenting stress results are mixed
  - Masse et al. found p-c dysfunctional interaction improved
  - Ginn et al. found positive trend with difficult child subscale
  - Solomon et al. found stress remained at clinical levels
- Satisfaction is high (Masse et. al 2016)

# Improvement in Parent Skills

## DPICS “Do” Behaviors



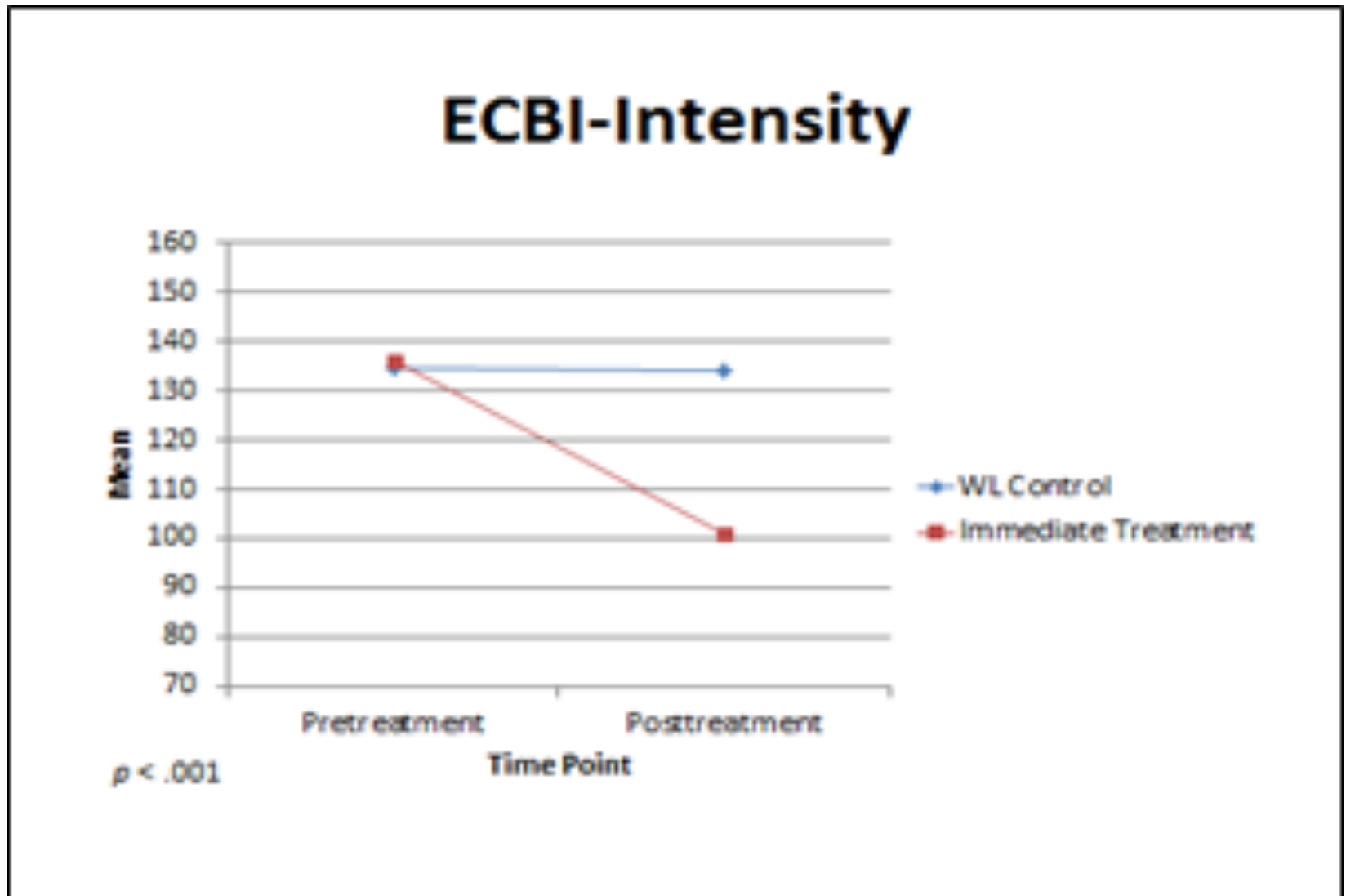
# Do The Children Change?

- Disruptive behavior moves into non-clinical range

Armstrong & Kimonis, 2013; Ginn et al., 2015; Hatamzadeh et al., 2010; Lesack et al., 2014; Masse et al, 2016; Solomon, 2008

- Improvement with social awareness/social cues  
Ginn et al.
- Adaptive functioning improvement: child flexibility with situations, people, things Solomon et al.
- Atypicality improved: ex, rocking and repeating behavior Solomon et al.

# Decrease in Child Disruptive Behaviors





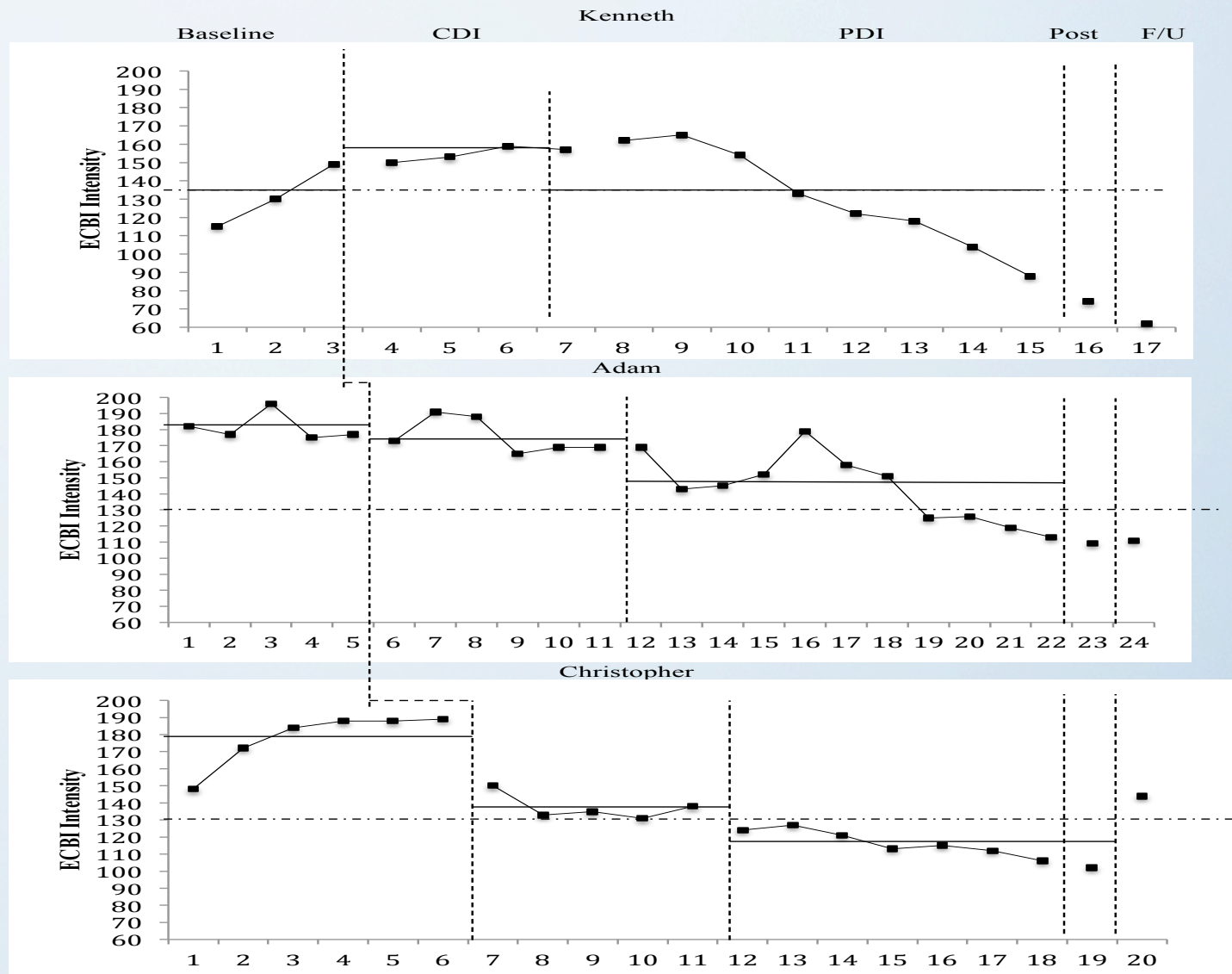
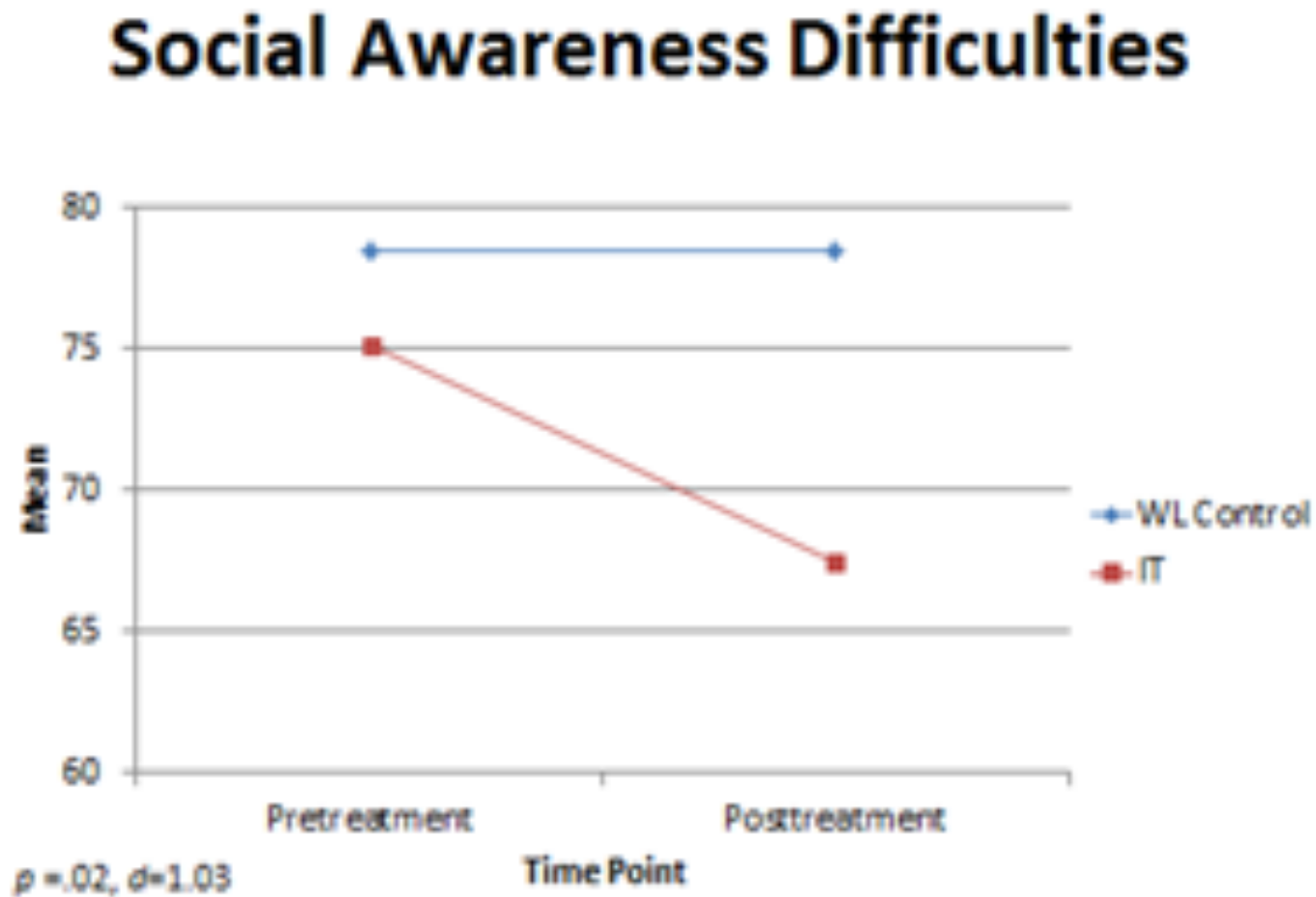


Figure 4. ECBI intensity scores reported by caregivers with horizontal lines indicating phase mean and dashed horizontal line indicating clinical cutoff.

# Decrease in Child Social Awareness Problems

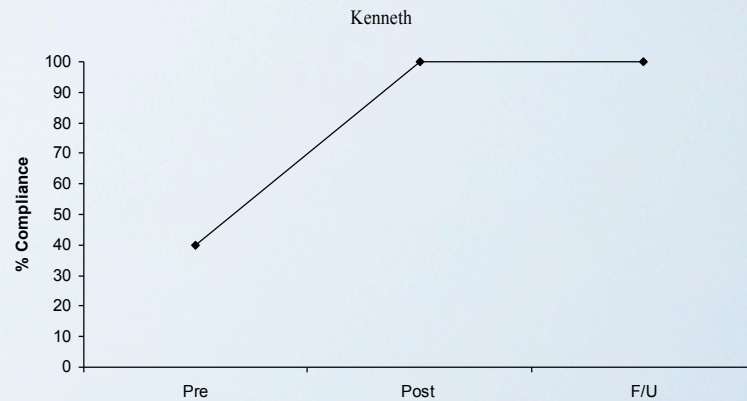
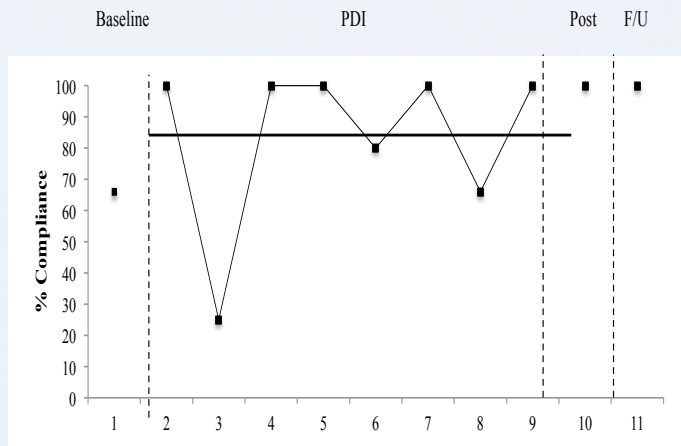




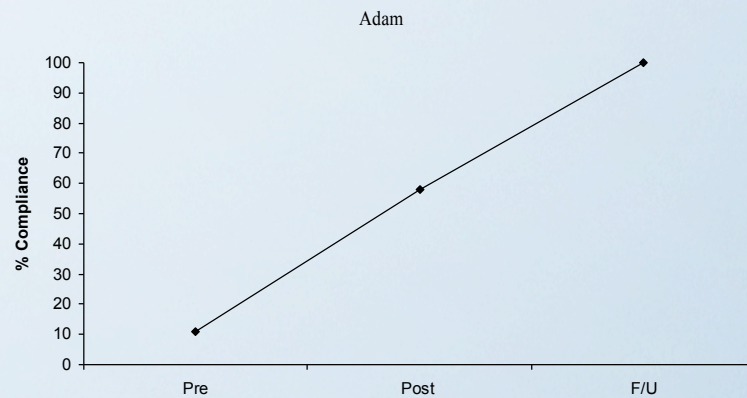
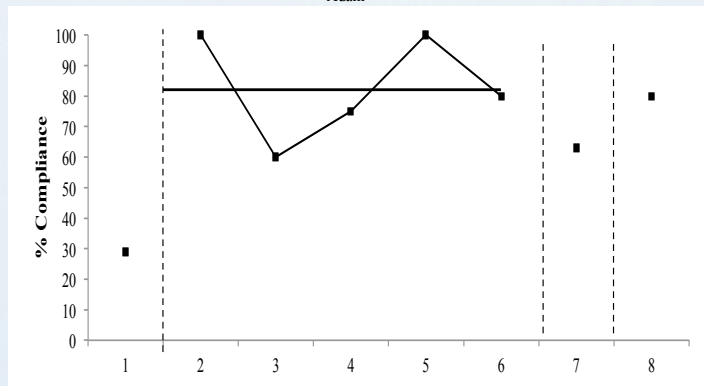
# Wait, there's more!

- Shared positive affect improved (Solomon et al., 2008)
- Child compliance improves (Masse et al., 2016)

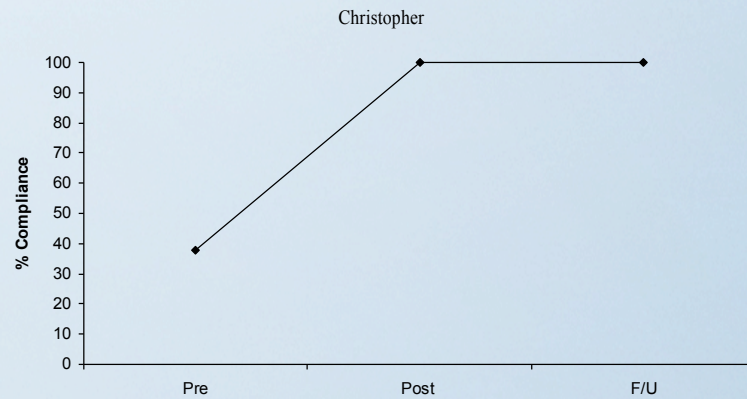
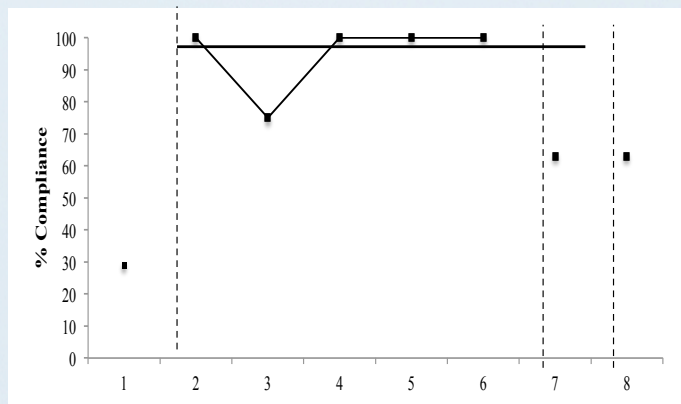
Kenneth



Adam



Christopher





# Show of hands....

- How many folks see children with ASD for PCIT?
- How many have seen more than 3 cases?
- More than 5 cases?

- 10?

- 20?

- More than 20 ????

# Clinical > Research

## Study

## Number of children

Agazzi et al.

1 Single Case Design

Armstrong & Kimonis

1 Single Case Design

Ginn et al.

15 IT, 15 WL

Hatamzadeh et al.

4 Single Subject Design

Lesack et al.

1 Single Case Design

Masse et al.

3 Single Subject Design

Solomon et al.

10 IT, 9 WL

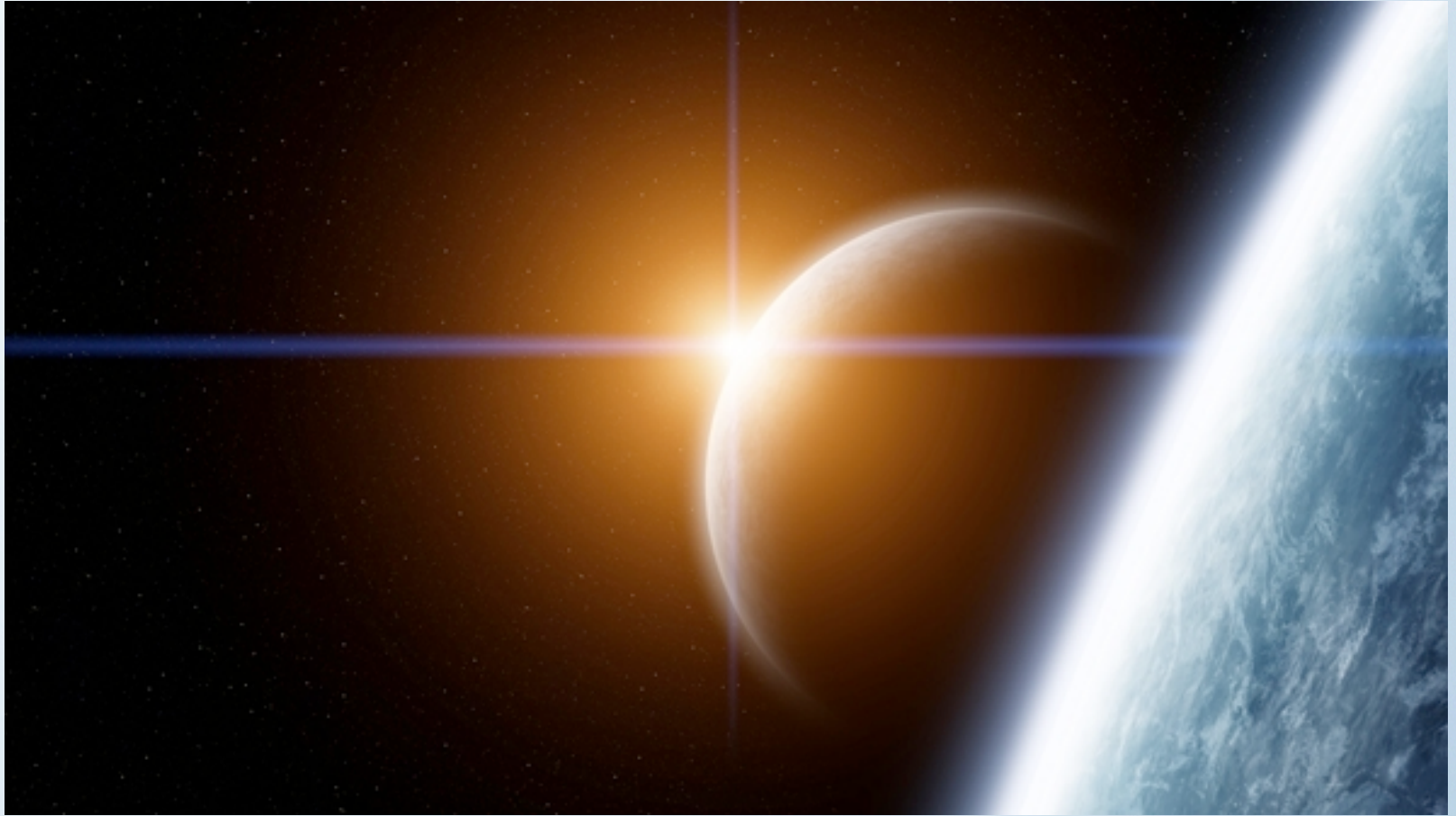


# Where We Are (hopefully) Going

## **Outcome Measures:**

- Emotional availability
- Social skills/Social Responsiveness
- Language capabilities
- Joint attention
- Constructive play
- Adaptive functioning
- CDI/PDI phase analysis

# The Next Frontier: Who Does it Work With?






# On The Horizon....







# Treatment of Behavior Problems among School-Age Children with Autism Spectrum Disorders

John Harrington, Korrie Allen,  
Cathy Cooke, James Paulson





# Background

## ► Purpose

- Evaluation effectiveness of PCIT in reducing disruptive behaviors among school age (5-10 years old) children with ASD

## ► Design

- 2x2 quasi-experimental design
- Stratified by medication use and matched based on severity of autism and behavioral problems

## ► Overall completion rate of 83% (44 families)

- 25 TG families completed PCIT (100%)
- 19 CG families completed the study (67%)





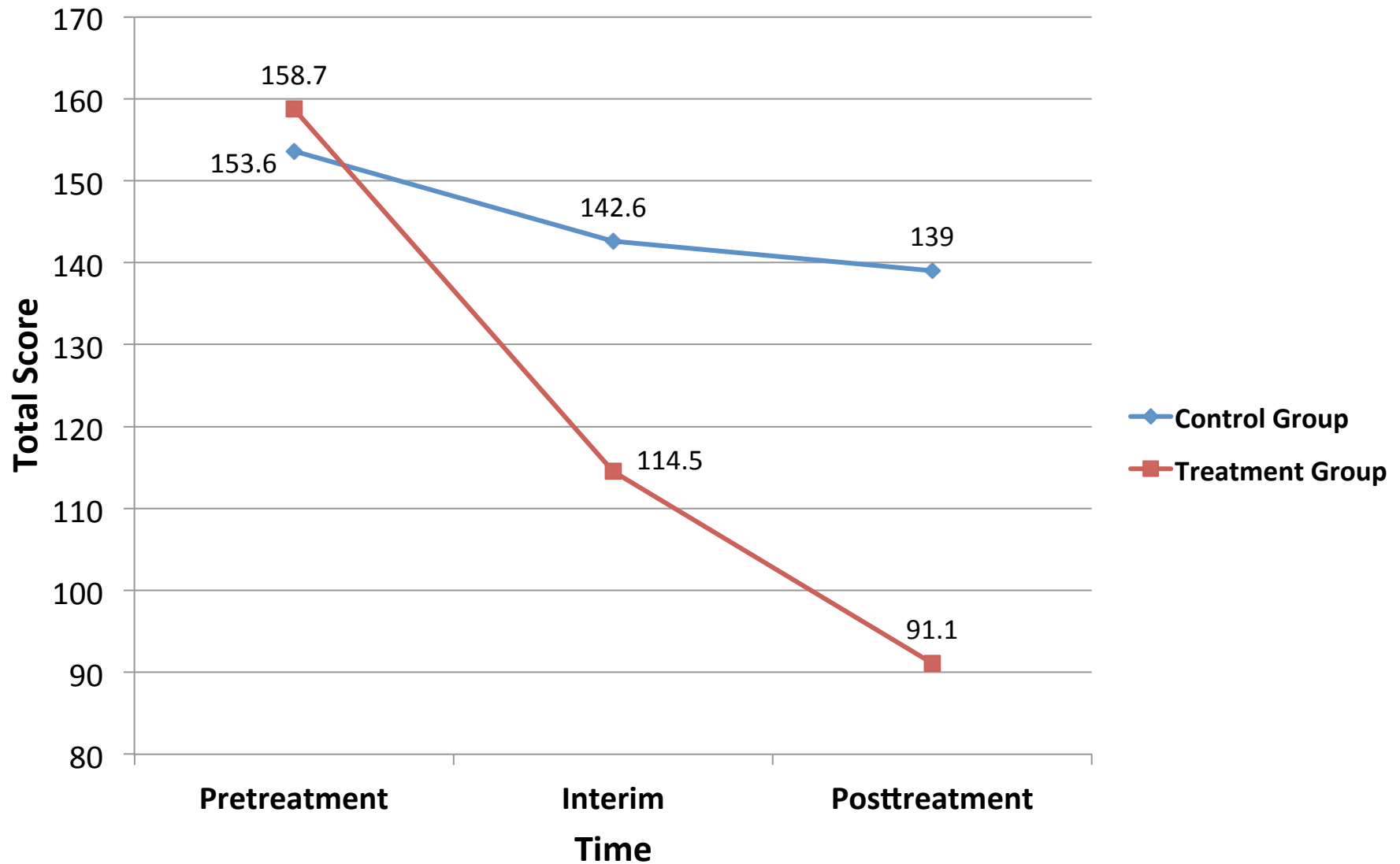
# Four Assessment Periods

- Time 1: Pre-test
  - Before treatment
- Time 2: Interim
  - Week 7
  - Between CDI and PDI
- Time 3: Post-test
  - Week 14
  - After treatment completed
- Time 4: Follow-up
  - 3 months after treatment completion

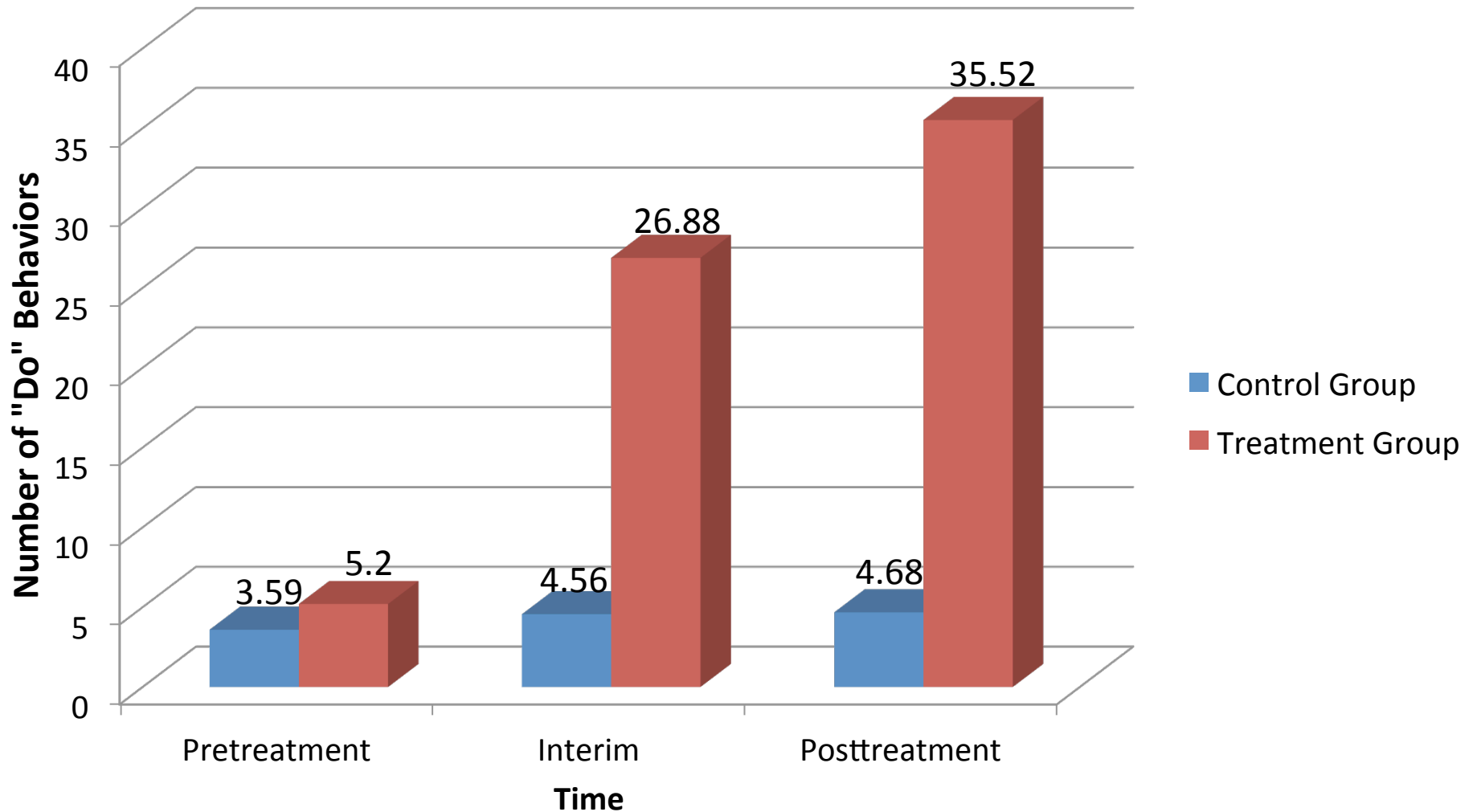




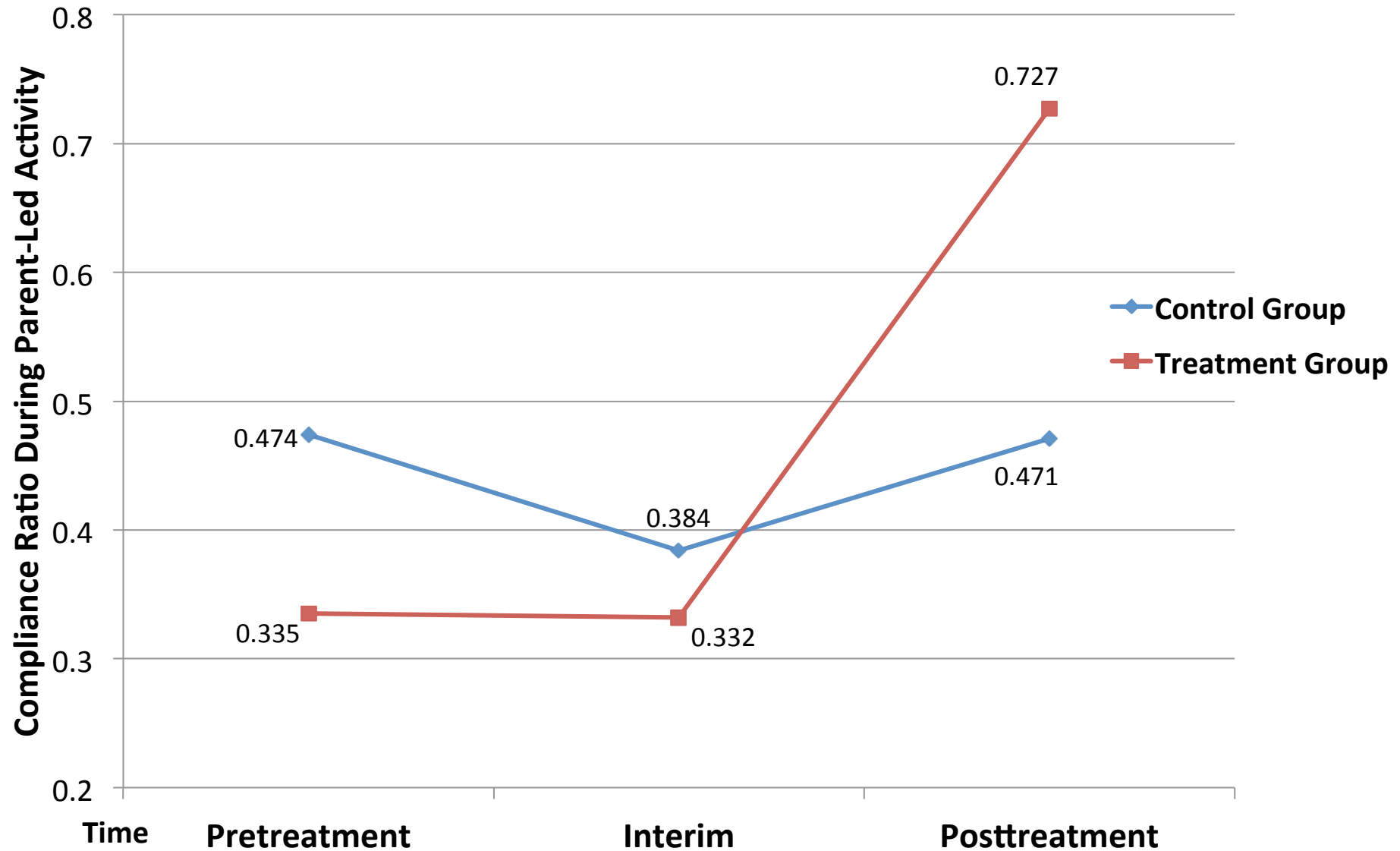
# Change in ECBI Intensity



# Change in DPICS “DO” Behaviors

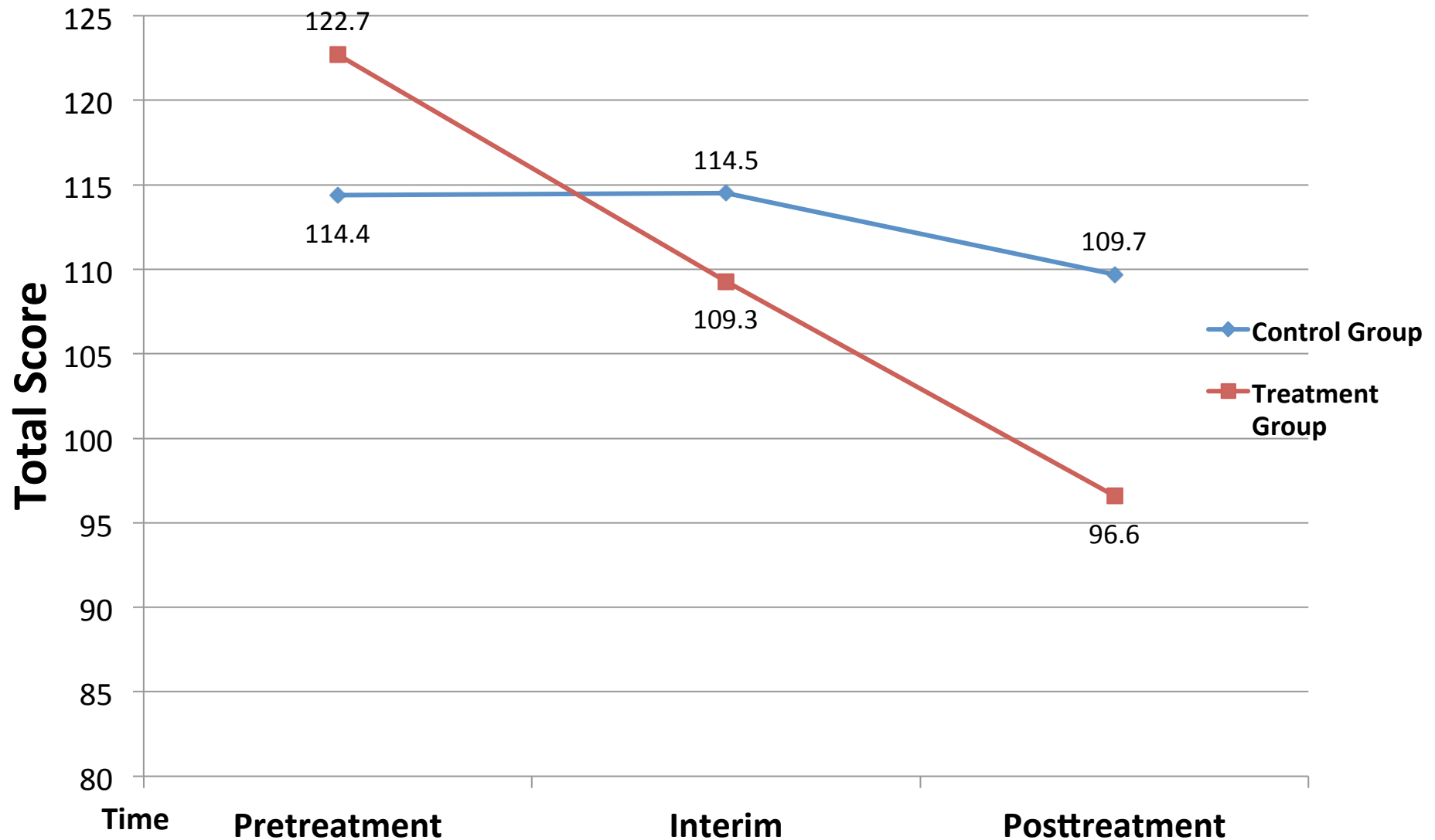


# Change in Compliance

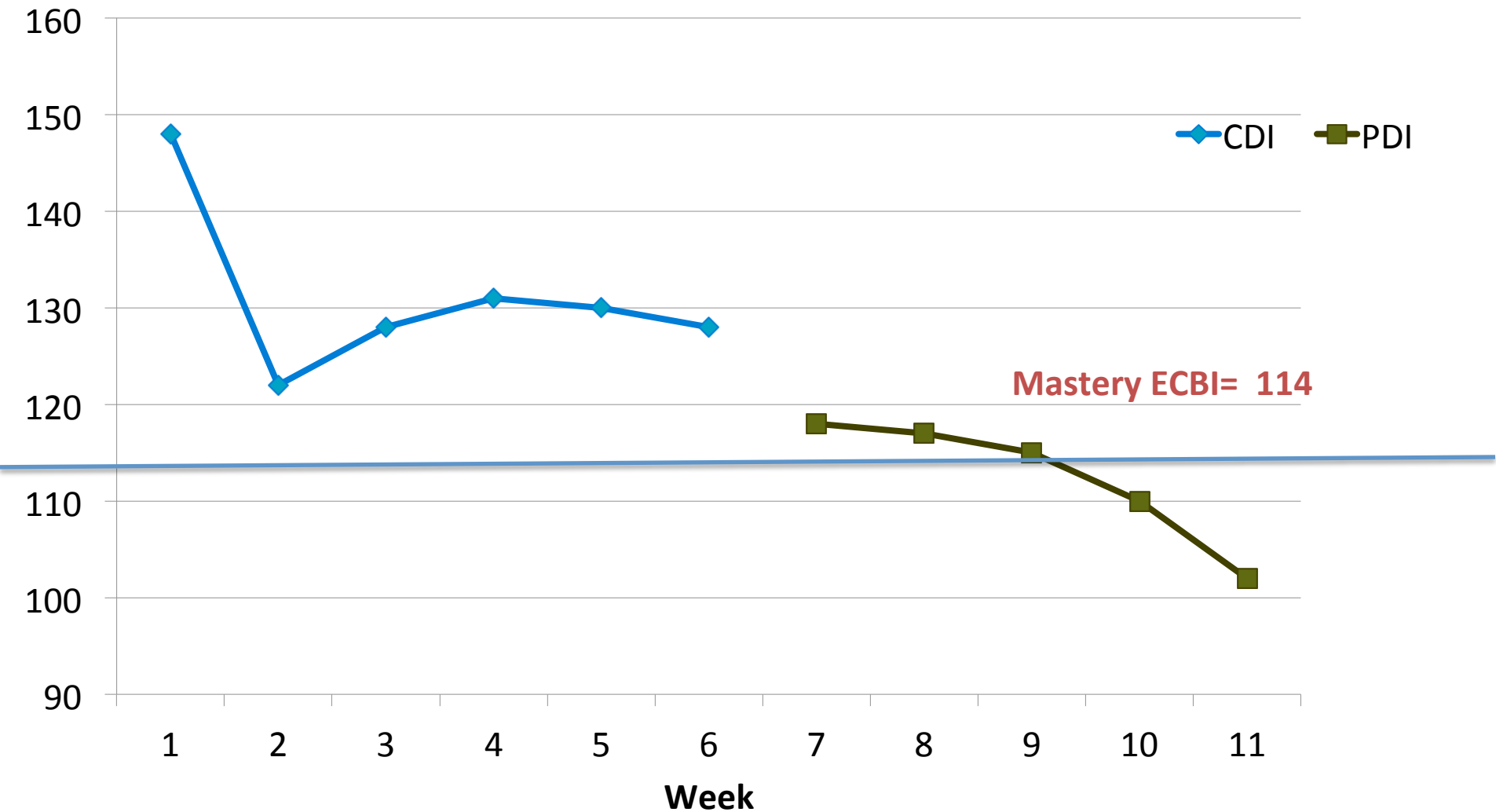




# Change in Parent Stress

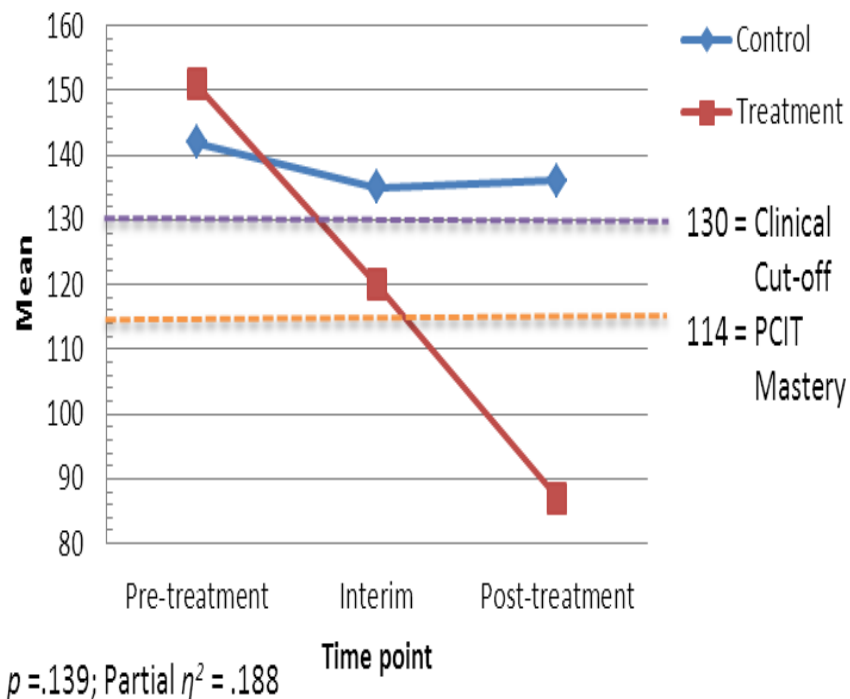


# Impact of PDI



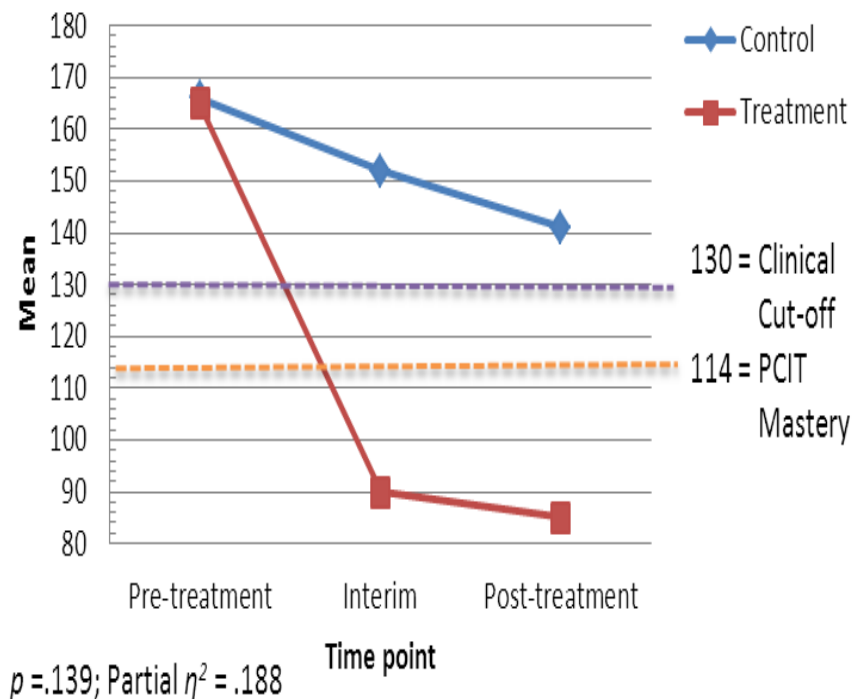
*“Our hypothesis about the different trend in treatment response was that the less severe or high functioning children responded similar to neurotypical children. The parents of more severe children seemed to benefit from learning how to respond to their child and engage in play and once the interactions improved most of the behaviors improved as well.”*

### ECBI-Intensity for CARS $t \leq 50$



**Less Severe Autism**

### ECBI-Intensity for CARS $t > 50$



**More Severe Autism**



# Autism Speaks Grant

20 families of children with ASD (ages 2.6-6 years) will be randomized to either PCIT training or a wait-list control group.

Treatment will involve 20 weekly, one-hour parent-child coaching sessions.

In the future, investigators are interested in extending research on PCIT to assess the individual and combined efficacy of PCIT and psychopharmacological treatment,



# PCIT & The Autism Landscape





# Statement of Problem

- 1 in 68 children identified with an autism spectrum disorder (ASD)
- More children diagnosed with ASD this year than AIDS, diabetes, and cancer combined
- Economic costs:
  - National cost at ~\$66 billion per year for children
  - \$175 billion for adults with ASD (Buescher, Cidav, Knapp, & Mandell, 2014; Knapp & Buescher, 2014).







# Behavior Problems and ASD

- 68% display aggression toward a caregiver
  - ~25% diagnosed with ODD (Kaat & Lecavalier, 2013)
  - ~ 10% of DBD referrals (Brookman-Frazee et al., 2010)
- > 25% of children with ASD administered psychotropic medication for disruptive behavior



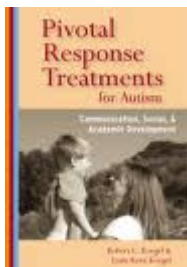


# Review of Traditional Treatments

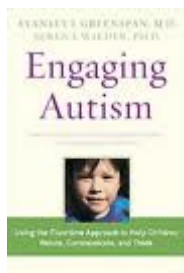
- Structured behavioral treatments using principles of operant conditioning
  - Example: Lovaas' Discrete Trial Training
    - One-on-one interaction
    - Short and clear instructions by therapist
    - Carefully planned procedures for prompting children to succeed in following instructions and fading of prompts
    - Immediate reinforcement of correct response
- “Well-established” treatment



# Another Behavioral Approach: Naturalistic Teaching Strategies



- **Pivotal Response Training (PRT)** (Mohammadzhari, Koegel, Rezaee, & Rafiee, 2014)
  - Uses a developmental framework and behavioral principles to increase a child's motivation to participate in learning skills



- **Developmental, Individual-Difference, Relationship-Based model (DIR)** (Solomon et al, 2014)
  - Floor time: child leads the play in spontaneous, creative interactions



- **Treatment and Education of Autistic and Communication-Handicapped Children (TEACCH)** (Mesibov G. et al., 2005)
  - Goal to make play and socializing enjoyable by creating and practicing personally meaningful experiences in a social contexts

Slide credit: Drs. Korrie Allen & Leah Clionsky





# Implementation Difficulties

- Time-consuming
- Expensive
- Difficult to find
- Problems with community treatment
  - Not enough professionals with necessary training and experience
- Lack of manualized treatments
  - People are taking bits and pieces of treatments and combining them
  - Lack of treatment integrity

Slide credit: Drs. Korrie Allen & Leah Clionsky





# Public Health Challenge

- **Problem:** lots of children are diagnosed with ASD
- **Problem:** lots of those children are having behavioral difficulties and presenting to MH agencies
- **Problem:** most ASD treatments are costly, unavailable, and not recognized EBT's for behavioral issues

Slide credit: Drs. Korrie Allen & Leah Clionsky



# We Need a Treatment That Is...

- Effective
  - Children demonstrate long-term improvements on objective measures
- Practical
  - Affordable
  - Time efficient
  - Available
- Replicable
  - Manualized



Slide credit: Drs. Korrie Allen & Leah Clionsky



## EVIDENCE BASE UPDATE

# Evidence Base Update for Autism Spectrum Disorder

Tristram Smith and Suzannah Iadarola

*Department of Pediatrics, University of Rochester Medical Center*

This evidence base update examines the level of empirical support for interventions for children with autism spectrum disorder (ASD) younger than 5 years old. It focuses on research published since a previous review in this journal (Rogers & Vismara, 2008). We identified psychological or behavioral interventions that had been manualized and evaluated in either (a) experimental or quasi-experimental group studies or (b) systematic reviews of single-subject studies. We extracted data from all studies that met these criteria and were published after the previous review. Interventions were categorized across two dimensions. First, *primary theoretical principles* included applied behavior analysis (ABA), developmental social-pragmatic (DSP), or both. Second, *practice elements* included scope (comprehensive or focused), modality (individual intervention with the child, parent training, or classrooms), and intervention targets (e.g., spoken language or alternative and augmentative communication). We classified two interventions as well-established (individual, comprehensive ABA and teacher-implemented, focused ABA + DSP), 3 as probably efficacious (individual, focused ABA for augmentative and alternative communication; individual, focused ABA + DSP; and focused DSP parent training), and 5 as possibly efficacious (individual, comprehensive ABA + DSP; comprehensive ABA classrooms; focused ABA for spoken communication; focused ABA parent training; and teacher-implemented, focused DSP). The evidence base for ASD interventions has grown substantially since 2008. An increasing number of interventions have some empirical support; others are emerging as potentially efficacious. Priorities for future research include improving outcome measures, developing interventions for understudied ASD symptoms (e.g., repetitive behaviors), pinpointing mechanisms of action in interventions, and adapting interventions for implementation with fidelity by community providers.

Autism spectrum disorder (ASD) is defined by difficulties with reciprocal social communication and stereotyped interests or behaviors (American Psychiatric Association [APA], 2013) that usually emerge in early childhood. About one third of children with ASD have delays in cognitive development and daily living skills (Autism and Developmental Disabilities Monitoring Network, 2014). Co-occurring behavior problems (tantrums, aggression, self-injury, impulsivity, anxiety, extreme food

selectivity, insomnia) and medical conditions (e.g., seizure disorder, gastrointestinal disturbance) are also common. Although ASD almost always persists across the lifespan, early intervention can alleviate symptoms (Rogers & Vismara, 2008).

ASD has a prenatal origin related to genetic risk and environmental events; however, the precise etiology has not been determined (Volkmar, Paul, Rogers, & Pelphrey, 2014). Although once considered rare, ASD is now estimated to occur in approximately 1 in 68 individuals (Autism and Developmental Disabilities Monitoring Network, 2014). It remains unknown whether the greater detection of ASD solely reflects changes in practice (broadened diagnostic criteria, heightened awareness,

Correspondence should be addressed to Tristram Smith, Division of Neurodevelopmental and Behavioral Pediatrics, Department of Pediatrics, University of Rochester Medical Center, 601 Elmwood Avenue, Box 671, Rochester, NY 14642. E-mail: [Tristram\\_Smith@URMC.Rochester.edu](mailto:Tristram_Smith@URMC.Rochester.edu)



# Best Practices for ASD Treatment

1. Family involvement in treatment and across settings
2. Increase child engagement by:
  - Utilizing positive reinforcement
  - Introducing preferred interests, activities, and objects into the treatment setting
3. Select treatment goals based on data-based assessment and continually monitor progress

# We Need a Treatment That Is...



## □ Effective

- Children demonstrate long-term improvements on objective measures



## □ Practical

- Affordable: 1 hour of therapy
- Time efficient: 1 hour + 5 minutes daily; less than 6 months
- Available: Many PCIT therapists



## □ Replicable

- Manualized: Yes!

# And Also.....

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- ✓ Involves caregivers
- ✓ Focuses on child engagement by using familiar activities and positive reinforcement for pro-social behaviors
- ✓ Uses data to determine treatment goals and progress



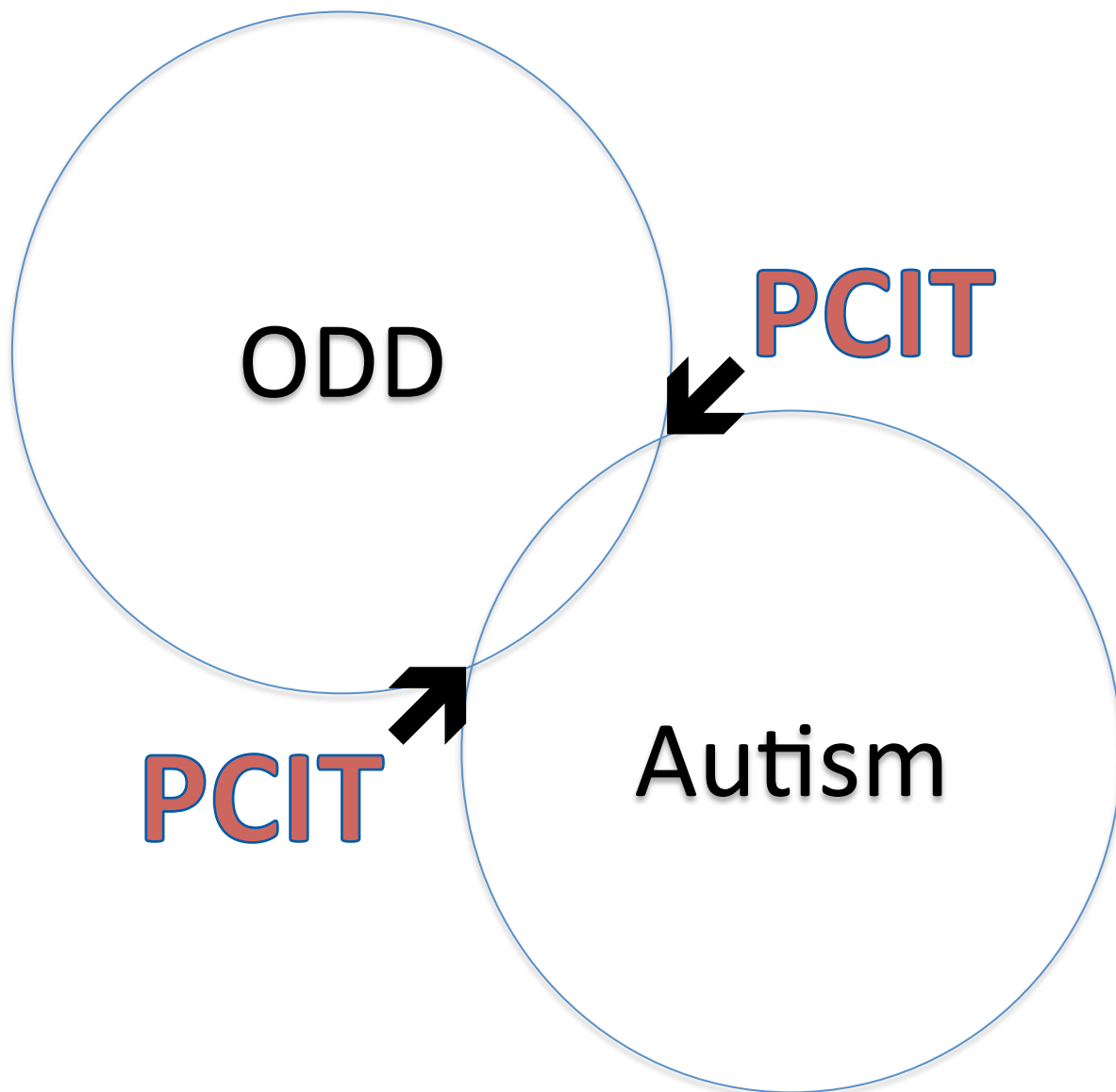
What Do We Need??





**DO YOU BELIEVE?**







# Social Contingencies

- PCIT Currency: Social and communicative
  - ASD Deficit: Social Domains
- PCIT as conduit to *uncover* and increase positive interaction
- Do some children with ASD respond better to PCIT than others?
  - What do you think?





# Behavioral Methods

- Functional Assessment: Develop hypotheses about antecedents and consequences that maintain behaviors through observation
  - What does this sound like?
- Functional Analysis: Systematically manipulating variables in real-time
  - What does this sound like?







# PCIT Methods

- DPICS coding is an informal functional assessment:
  - Parent Command → Non-Compliance → Warning Statement → Compliance
- Coaching is an informal functional analysis:
  - Child engages in echolalic speech → parents coached to ignore → echolalia reduces





# Primary Functions Targeted in PCIT

- Attention
  - Back to social contingencies (e.g., is there an attention-based function of behaviors with children with Autism?)
  - Test it!
- Task Avoidance
  - Do children on the spectrum have non-compliance (functionally) similar to traditional ODD?
  - Test it!



# Meet “Charlie”



- 4-year-old referred from a specialized educational program at a community school.
- Began talking at 12 months but language entirely regressed at 18 months, then dx'ed with autism.
- Sig. expressive language delays, immediate echolalia, and several self-stimulatory behaviors (e.g., rocking, hand flapping).

# “Charlie”



- Defiant and often would not comply with demands at both home and school
- Frequently had tantrums
- Physically aggressive with parents
- “We basically spend our whole day doing negative talk”





# Case Examples

- Case #1: Attention
- Case #2: Task Avoidance



# A Dash/Pinch of Clinical Talk

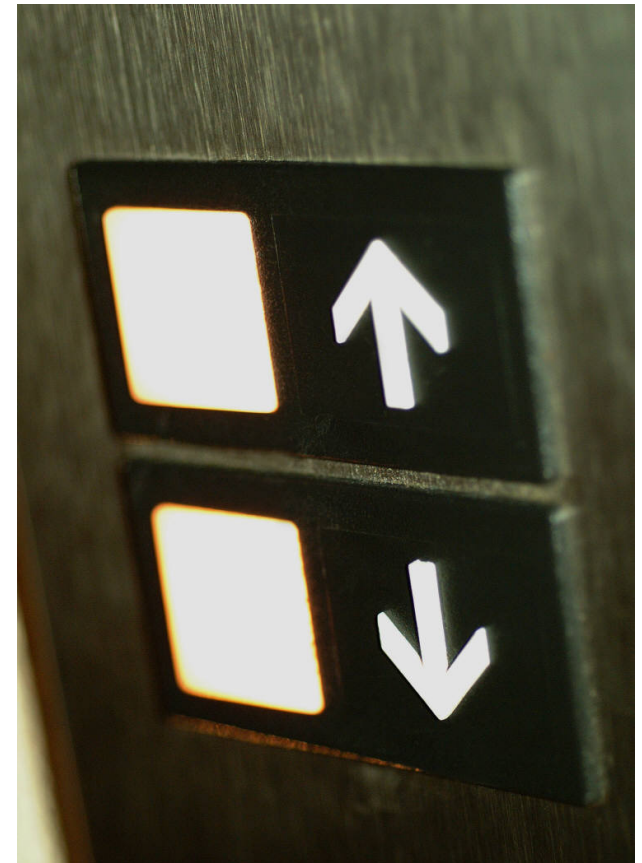


# What Can CDI Do For You?

- Fact: PCIT is an EBT for behavior issues
- Big question: Does PCIT impact more core symptomology of autism?
  - Which behaviors?

# Utility of PCIT with ASD: The Ups and Downs

- Strives to increase skills by using techniques designed to:
  - Enhance parent-child relationship
  - Increase:
    - Constructive/symbolic play
    - Language/social skills
    - Attention span
    - Play repertoire
    - Behavioral flexibility
  - Decrease:
    - Oppositional and aggressive behaviors
    - Stereotyped behaviors



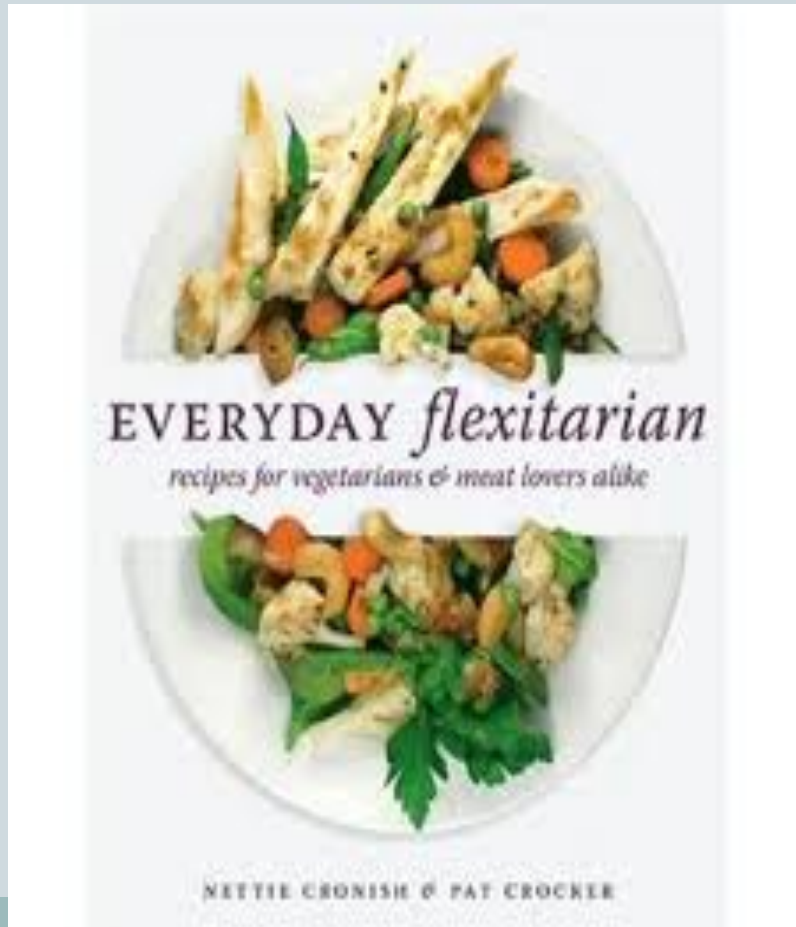


# If Nothing Else.....

- Possible gateway intervention
  - Preparation for more comprehensive treatments
  - Never hurts to strengthen parent-child relationship
    - May be the most important thing



Be a Flexitarian.  
learn more at <http://msdining>



- Flexibility within Fidelity
  - Different meals with basic ingredients
- Intersection of clinical science and art
- Coaching goals tailored to each child/family

# PCIT and ASD: Labeled Praises



Thanks to Dr. Christy Warner-Metzger for LP slides!

ASD Symptoms: <b>DSM-IV-TR</b>	Positive Opposite Behaviors
<b>Impairment in use of nonverbal behaviors</b> Eye contact Facial expression Body postures Gestures	Good job looking at me.
<b>Failure to develop peer relationships appropriate to developmental level</b>	Good job playing with your brother.
<b>Lack of spontaneous seeking to share enjoyment, interests or achievements with others</b> Lack of showing Lack of bringing Lack of pointing out objects of interest	Thank you for showing me your toy. I like how you brought your shoe to me. Thank you for pointing to the toy on the shelf.
<b>No social or emotional reciprocity</b>	I like it when we play together/share.



ASD Target Behaviors: ADOS (Modules 1 &2)	Praises
Response to name	Thank you for looking at me when I said your name.
Response to touch from others	I like it when you let me hug you/hold your hand.
Response to joint attention (follows another's gaze with or without accompanied pointing)	Good job looking at what I'm looking at.
Affect	I like it when you smile.
Initiate joint attention	Thanks for getting my attention. I like how you got me to look at the toy.
Shared enjoyment	I like it when we play together.
Requesting	I like how you asked with your words/hands
Smiling in response to calling in a way that implies physical contact (e.g., "I'm gonna get you!")	I like how you're smiling at me.
Gestures directed at others Points with index finger Open-handed reach Hands item to another person	Thank you for pointing/reaching. Thank you for handing me the toy.
Facial expressions directed at others	I like how you're smiling at me.
Gaze directed at others	I like it when you look at me.
Imitation of familiar actions	I like how you're doing what I'm doing.

# Reflections



- Reflect purposeful language
  - Vocalizations with obvious and appropriate communicative intent or consistent with play situation
- Ignore/Redirect stereotyped vocalizations (after one)
- Reflections involve the vocalization plus the word associated with object (“blo. That’s right, it’s a block”)

# Imitation: Join In!



- “Entry skill”
- Imitation with slight expansion
  - “I am going to spin this cup like you and then drink from it”
  - (child repeats “purple”; “It is purple and red too!” <verbal imitation/RF>
- Helps with fixed interests

# Expansion Through Play



- Be cognizant of toy selection and topics as a way of engagement
  - **If needed**, introduce familiar toys and topics for initial engagement/connection then DRO
  - Include toys where parents have to inherently help.
- Always look to expand play repertoire any chance you get!
- Incorporate the fixed interest and new toy (ex. Feeding the baby horse or making the baby horse a barn)
- Shaping is your friend!
  - Helicopter propeller to fly-by's



# Please, not another brown garage!



## Shaped....



- Add people, cars
- Add a house
- Draw flowers
- Have mom take turns at drawing.

# CDI Coaching: General Comments



- Careful with spacing and physical positives
- Get comfy with therapeutic silence or allow for some time between comments (allow for stimulation breaks)
- Hang out with the same theme across skills if you need to (namely for lower fx kiddos)
  - “That IS a train. You’re making the green train go under the bridge. I like the way you are making the train stay on the tracks.”

# Be Goofy!



- Model and embrace being silly and unstructured.
- Veer from the literal
- It's healthy!
- Can you coach this?

I LOVE LAUGHING  
AND GIGGLING  
AND BEING SILLY  
WITH YOU, IT  
MAKES ME LOVE  
YOU EVEN MORE.

[Lifelovequotesandsayings.com](http://Lifelovequotesandsayings.com)

# PDI Clinical Applications: Commands



- Developmentally-appropriate commands
  - Undershoot it
  - Be aware of sensory needs (eject early if needed)
  - Don't be fooled!
- “Cueing” commands initially
- Rationales might be important
- Physical prompts in adjunct to verbal commands



# PDI Clinical Applications: Commands



- Consider “theory of mind”
  - “take” commands versus “give commands”
- Be aware of pronoun difficulties
  - “Me/I” versus “you”
- Use commands as redirection from fixed behaviors and interests (e.g., line up letters then numbers, put the tractor in box)
- Generalization: Increase flexibility within environment
  - New toys
  - Transitions
  - Integrating creative play

# PDI Clinical Applications: Timeout



- Increase challenge with commands
  - Don't choose Thomas as the first command
  - Embrace momentum
- Timeout Sequence
  - Allow time to process command (vs. drift off task)
  - Shape timeout if needed (not 5s)
  - More prompts than you may be comfortable with

# General Comments

- May have more total sessions
- Check-in and check-out may be a bit more difficult given the complexities
- Keep up the CDI skills in PDI!
- Keep an eye on simple antecedent management.
  - ▣ Setting events (sleep, time, hunger)
  - ▣ Visual schedules

# General Comments

- Item analysis of the ECBI
  - ▣ Language and adaptive functioning
    - “Don’t wanna or can’t”
- Start with “pure” PCIT first
  - Maybe don’t begin your PCIT career with ASD cases
- Seek supervision! Lots of it!



“Learn, Not Just Teach.”





“I just wanted to pass on what a great session! The parent came in and said he went to the dentist without complaining last week. Mom did some CDI stuff with trains they had in the dentist office. He had a friend over and showed interest in them. When his friend put a hat on, he went to his room and grabbed his hat to show his friend. Lastly, he went to church and stood by the other kids to sing. In the past, he would run around the pews and be superman.”

# Contact Info

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