AUTISM SPECTRUM DISORDERS IN CHILDREN AND ADOLESCENTS: ASSESSMENT & TREATMENT CONSIDERATIONS FOR THE SCHOOL SETTING

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DISCLOSURES

Grant support from:

- NIA
- NICHD
- Autism Speaks
- Roche

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IT'S A LOT TO COVER!

- Identify the characteristics of autism spectrum disorder (ASD) and common comorbid disorders
- Discuss interventions and accommodations for children and adolescents with ASD and comorbid externalizing disorders (e.g., ADHD, ODD)
- Explain interventions and accommodations for children and adolescents with ASD and comorbid internalizing disorders (e.g., anxiety, depression)

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AUTISM 101

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AUTISM SPECTRUM DISORDER (DSM-IV)

- Pervasive Developmental Disorder (PDD)
  - -Autistic Disorder
  - -Asperger's Disorder
  - -Pervasive Developmental Disorder NOS

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AUTISM SPECTRUM DISORDER (DSM 5)

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AUTISM SPECTRUM DISORDER (ASD)

A. Persistent deficits in social communication and social interaction, manifested by all three:

- Deficits in social-emotional reciprocity
- Deficits in nonverbal communicative behaviors used for social interaction
- Deficits in developing, maintaining, and understanding relationships

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AUTISM SPECTRUM DISORDER (ASD)

B. Restricted, repetitive patterns of behavior, interests, or activities, manifested by at least two:

- Stereotyped or repetitive motor movements, use of objects, or speech
- Insistence on sameness, inflexible adherence to routines, or ritualized patterns
- Highly restricted, fixated interests that are abnormal in intensity or focus
- Hyper- or hypo-reactivity to sensory input

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OTHER FEATURES

D: Symptoms impair everyday functioning

- Symptoms are present in early childhood
- A small number experience regression
- Symptoms may be more pronounced as the “social bar” rises with age
- Many associated comorbid psychiatric disorders
- Many associated medical conditions (GI problems, sleep issues, eating issues)

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ASD: ADDITIONAL FEATURES

- 4:1 male to female
- 30 - 40% Intellectually Disabled
- Impaired daily living skills (not explained by IQ)
- Up to 25% have seizures

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PREVALENCE: HOW COMMON IS ASD?

- Historically
  - Autism (narrowly defined) 2 -5 per 10,000
- Current (wider spectrum)
  - World wide review: 6.2 per 1000
  - CDC: 1 in 54 (2020 estimate)
- Is there a true rise in the frequency of ASDs?

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REASONS FOR INCREASING PREVALENCE

- Broadening case definition
- Increased public awareness
- Better population sampling
- Better diagnostic methods

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RATE OF BEHAVIOR PROBLEMS

- National Survey of Children's Health 2007 (Close et al., Pediatrics, 2012)
- N=1366 children with ASD
- Three age groups: 3-5, 6-11 and 12-17 years
- Included with current and past diagnoses of ASD

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RATE OF BEHAVIORAL HEALTH ISSUES (MODERATE OR SEVERE)

Area	3-5 years	6-11 years	12-17 years
Anxiety	5.2%	19.7%	28.4%
ADHD	12.4%	27.3%	29.6%
Depression	0.7%	4.6%	10.7%
Conduct Problem	15.2%	18.2%	19.1%

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ASD PSYCHOTROPIC RATES IN OHIO (WITWER & LECAVALIER, 2005)

Medications Within The Last 12 Months Among Nonreferred Children With ASD, Ages 3-21 (n=353)

Treatments	Number	(%)
stimulants	86	(24.0)
antidepressants	76	(21.2)
antipsychotics	69	(19.5)
alpha agonists	39	(10.9)
mood stabilizers	15	(4.2)
anxiolitic/hypnotics	10	(2.8)
noradrenegic agonists	6	(1.7)
opiate blockers	5	(1.4)

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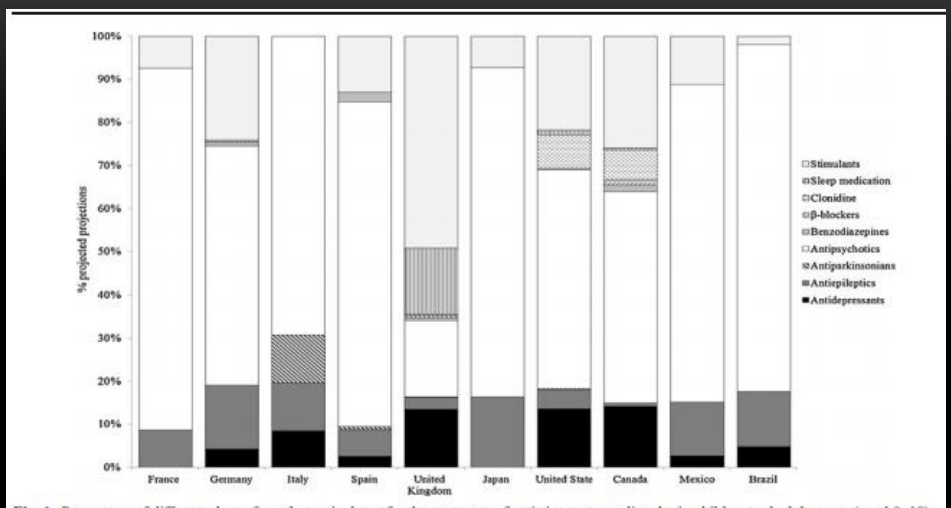

Fig. 1 Percentage of different class of psychotropic drugs for the treatment of autistic spectrum disorder in children and adolescents (aged 0–18)

Hsia et al. Psychopharmacolgy, 2014, 999-1009.

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EARLY SERVICES

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EARLY INTERVENTION

- Ideally child is diagnosed early (our goal is <18 months; average is 4 years)
- In state of PA, county in-home Early Intervention Services are provided from birth to 3 years
- IBHS (aka wraparound) services can provide intensive treatment in home or at school

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WHEN TO START TREATMENT?

- As early as possible
- Intensive
- Minimum of 25 hours per week

Lord C, McGee JP (Eds) Educating children with autism, National Research Council (2001) Washington DC

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WHAT IS INTENSIVE BEHAVIOR THERAPY?

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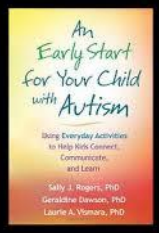
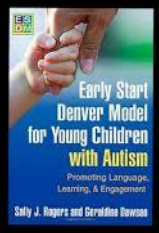
EARLY CHILD EVIDENCE-BASED BEHAVIORAL TREATMENTS

- Discrete Trial Training
- LEAP Model (Learning Experiences and Alternative Program for Preschoolers and their Parents)
- ESDM (Early Start Denver Model)
- Pivotal Response Training (PRT)





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COMMON EARLY INTERVENTION (EI) ELEMENTS

- Curriculum
- Highly supportive teaching environment
- Predictability and routine
- Behavior Analytic/Developmental
- Transition plan
- Family involvement

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ELEMENTARY, MIDDLE AND HIGH SCHOOL INTERVENTIONS

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SCHOOLS

- Primary setting where children with ASD receive intervention services
- Under pressure to incorporate evidence-based interventions
- Challenge to effectively implement and sustain interventions in schools

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WHY SO CHALLENGING TO MEET NEEDS OF CHILDREN WITH ASD IN OUR SCHOOLS?

- Wide range of functioning levels (severe ID to gifted)
- Wide range of behavioral concerns (severe aggression to no problems)
- Many higher functioning children with ASD remain "under the radar"
- Children with ASD can be in center-based schools, learning support or autism support classrooms or fully included

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ASSESSMENT TOOLS FOR EXTERNALIZATION DISORDERS

- BASC-3
- Vanderbilt
- Conners
- SNAP
- Aberrant Behavior Checklist

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INTERVENTIONS FOR EXTERNALIZING DISORDERS - ADHD

- Point systems/Daily home cards
- Organizational skills
- Homework cards
- Medication

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EXAMPLES OF MODIFICATIONS

- Leave class early
- Allow requested breaks
- Head phones for noise cancellation
- Picture schedules
- Buddy systems
- Avoid unexpected changes in schedule
- Computer learning
- If-then cards
- Student selection of task order

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	Age (years) for use as indicated by US FDA	Target symptoms	Effect size (d)	Common adverse effects
Risperidone	5–16	Agitation or irritability in ASD	0·94[123]	Increased appetite, sedation, weight gain
Aripiprazole	6–17	Agitation or irritability in ASD	0·87[124]	Nausea, weight gain
Atomoxetine	6–15	Typically for ADHD symptoms	0·68–0·84[129]	Decreased appetite nausea, irritability
Methylphenidate	≥6	ADHD	−0·78 (95% CI −1·13 to −0·43) (teacher-rated)[128]	Sleep disruption, decreased appetite
Guanfacine	6–12	ADHD	1·67[130]	Fatigue, sedation, decrease in pulse and blood pressure

ASD=autism spectrum disorder. ADHD=attention-deficit hyperactivity disorder. FDA=US Food & Drug Administration.

Table: **Evidence for use of medication in autism spectrum disorder**

Lord et al. Lancet, 2018, 508-520

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PARENT TRAINING

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WHY A PARENT TRAINING MODEL?

- Delivers intervention to adult (individual who spends the most time with child)
- Effects likely to generalize and maintain over time
- Efficient mode of service delivery
- Can have additive effects to other treatments

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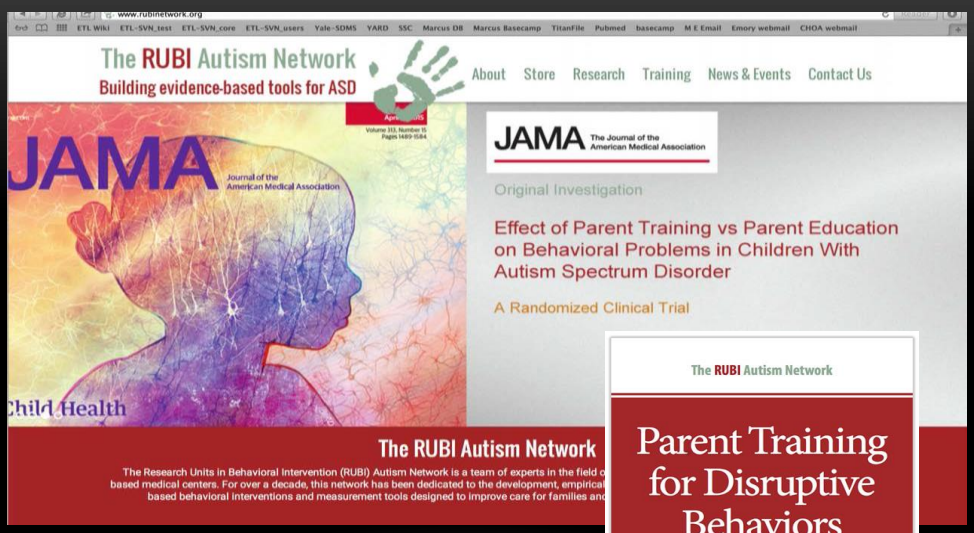

www.rubinetwork.org

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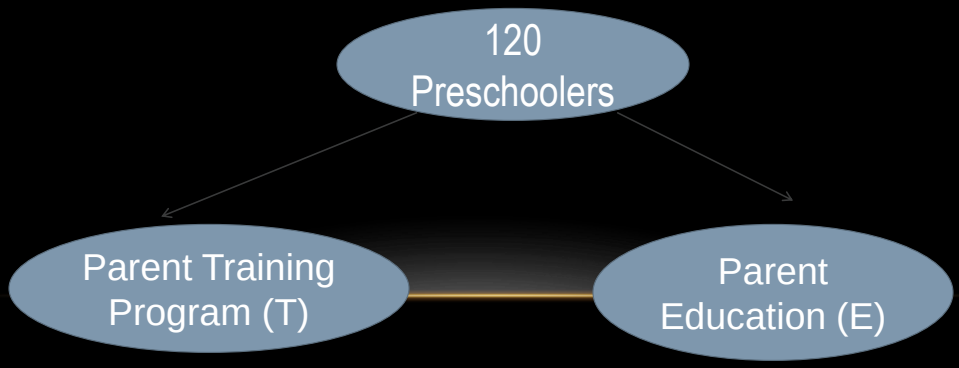
RESEARCH UNITS IN BEHAVIORAL INTERVENTIONS (RUBI)

- Preschoolers diagnosed with ASD
- Significant behavior problems



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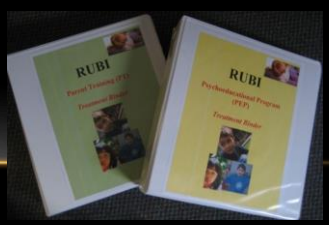
PEP SESSIONS

- Autism Diagnosis
- Understanding clinical evaluations
- Developmental Issues
- Family / Sibling Issues
- Medical & genetic Issues
- Choosing Effective Treatments
- Treatment Plan
- Treatment Options
- Alternative Treatments
- Advocacy & Support services
- Educational Services
- Play Activities



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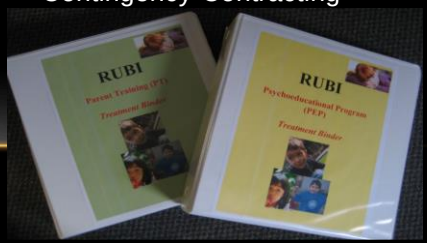
PT SESSION BREAKDOWN

- **11 core sessions**
  - Behavioral Principles (the ABC's)
  - Prevention Strategies
  - Daily Schedules
  - Reinforcement
  - Planned Ignoring
  - Compliance Training
  - Functional Communication Skills
  - Teaching Skills I and II
  - Generalization & Maintenance I and II
- **7 optional session materials**
  - Toileting
  - Feeding
  - Sleep
  - Time Out
  - Crisis Management
  - Contingency Contracting



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Both PT and PE

- Delivered individually to each caregiver
- 60- to 90-minute sessions in clinic
- Components of sessions:
  - Therapist script
    - Didactic Instruction
  - Activity sheets
  - Video vignettes
  - Role-plays between clinician and parent
  - Individually tailored homework assignments

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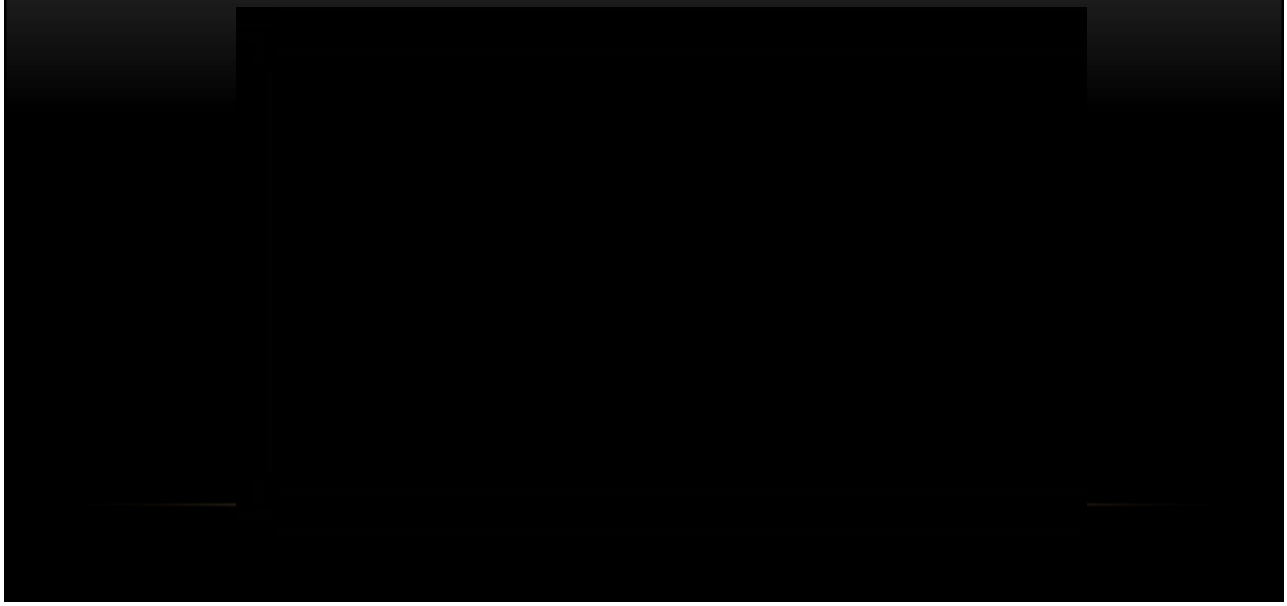
VIDEO VIGNETTE EXAMPLE



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ACTIVITY SHEET 3

PT Activity Sheet Example

Identifying Antecedents

#1. Susan hits Fred after he takes the book she is looking at.
Antecedent: _____

#2. Mary starts to interrupt her mother by screaming when she is talking on the telephone.
Antecedent: _____

#3. Randy throws his vegetables after his mother puts them on his plate.
Antecedent: _____

#4. Noah screams when he sees the playground on the way to the doctor's office.
Antecedent: _____

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PT Homework Sheet Example

Homework Sheet

Behavior #1 _____

Reinforcer: _____

When during the day can you practice reinforcing this behavior? _____

_____

Practice Opportunities	Date	Comments

Behavior #2 _____

Reinforcer: _____

When during the day can you practice reinforcing this behavior? _____

_____

Practice Opportunities	Date	Comments

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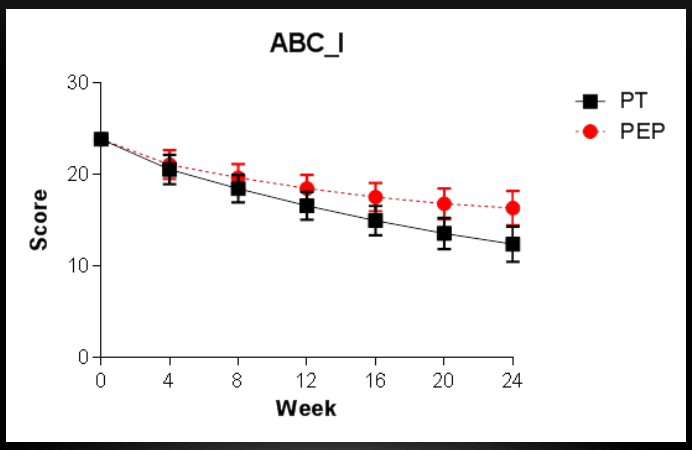
RUBI RESULTS: ABC IRRITABILITY SUBSCALE



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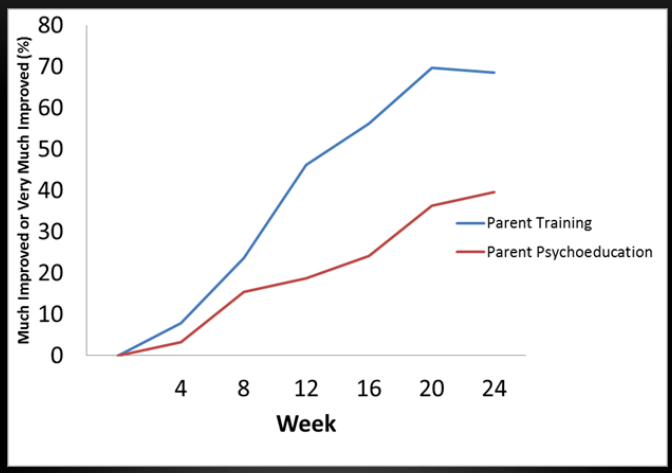
RUBI RESULTS: CLINICAL GLOBAL IMPROVEMENT



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ASSESSMENT TOOLS FOR ANXIETY

- PROMIS Pediatric Anxiety Rating Scale (PPAS)
- Parent Rated Anxiety Scale – ASD (PRAS-ASD) (Bearss et al., 2016)
- Screen for Child Anxiety Related Disorders (SCARED)(Birmaher et all, 1999)
- Spence Children's Anxiety Scale (SCAS)(Spence, 1998)
- Multidimensional Anxiety Scale for Children 2nd edition(March JS)

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FACING YOUR FEARS

- Evidence-based group CBT program
- Children 8-14 with ASD and anxiety
- School-based version
  - -12 weeks
  - -40 minutes/week curriculum
  - -Delivered by an inter-disciplinary school team
  - -Curriculum includes facilitator manual and child workbook

Reaven, Blakely-Smith, Nichols, Hepburn, Facing Your Fears. 2011. Paul Brookes Publishing Company

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COMMON CHARACTERISTICS OF CBT PROGRAMS FOR ASD

- Visual structure and support
- Incorporation of child specific interests
- Positive reinforcement and tokens
- Parent involvement
- Reducing demands for abstract language
- Video modeling
- Identifying strategies to support generalization
- Repetition and practice
- Short term (12-14 weeks)

- (Keefer at al, 2018; Moree & David, 2010; Slide adapted from Reaven presentation 5/27/20)

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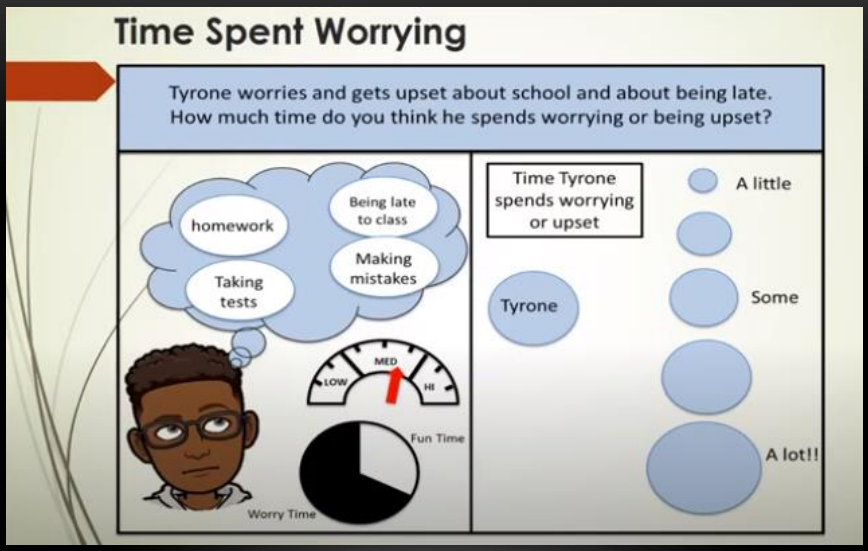

From Raeven May 2020 presentation

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SPECIFIC ASPECTS OF FYF

- Psychoeducation around fears
- Defining anxiety symptoms, identifying anxiety provoking situations
- Identifying physical feelings of anxiety/upset
- Deep breathing skills
- Paying attention to one's thoughts
- Graded exposures
- Parent component

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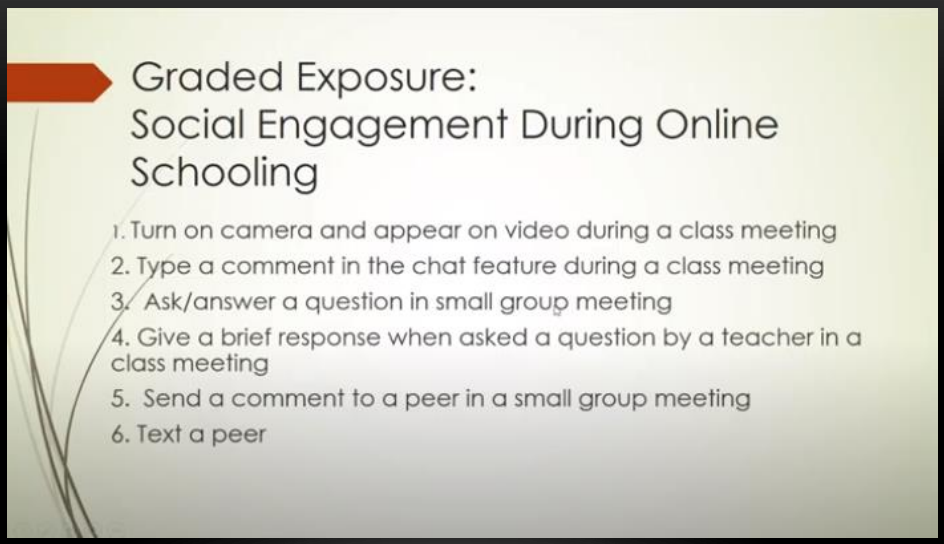

From Reaven May 2020 presentation

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FACING YOUR FEARS STUDY RESULTS

- Randomized controlled trial
- Facing Your Fears (N=24). Mean age 10 yrs. 6 months
- Treatment-As-Usual (N=26). Mean age 10 yrs. 5 months
- 12 week treatment
- No one dropped out of treatment-as-usual group
- 3 individuals dropped out of Facing Your Fears

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Table 2 Clinician severity ratings (CSRs) for the Facing Your Fears (FYF) and treatment-as-usual (TAU) groups (n = 43) pre-intervention post-intervention

Scale	FYF N = 20	TAU N = 23	FYF N = 20	TAU N = 23	Cohen's d
Anxiety Disorders Interview Schedule for Children-Parent Version (ADIS-P) CSR					
Separation (SEP)					
Mean	2.45	2.22	1.05	1.87	d = .74
SD	(2.33)	2.49	1.90	2.70	
Range	0–5	0–6	0–5	0–7	
Social (SOC)					
Mean	3.85	3.70	2.40	3.61	d = .66
SD	2.13	2.36	2.30	2.55	
Range	0–6	0–7	0–5	0–7	
Specific phobia (SpP)					
Mean	3.45	3.09	1.88	3.65	d = .70
SD	2.35	2.09	1.80	1.70	
Range	0–7	0–6	0–6	0–6	
Generalized anxiety (GAD)					
Mean	4.46	5.09	2.55	4.61	d = .87
SD	2.02	1.44	2.50	1.70	
Range	0–7	0–7	0–6	0–7	
ADIS-P Principal Anxiety Diagnoses (SAP, SOC, GAD, SpP)					
Mean	2.90	2.91	2.25	2.83	d = .71
SD	.91	.95	.91	.98	
Range	1–4	1–4	1–4	1–4	

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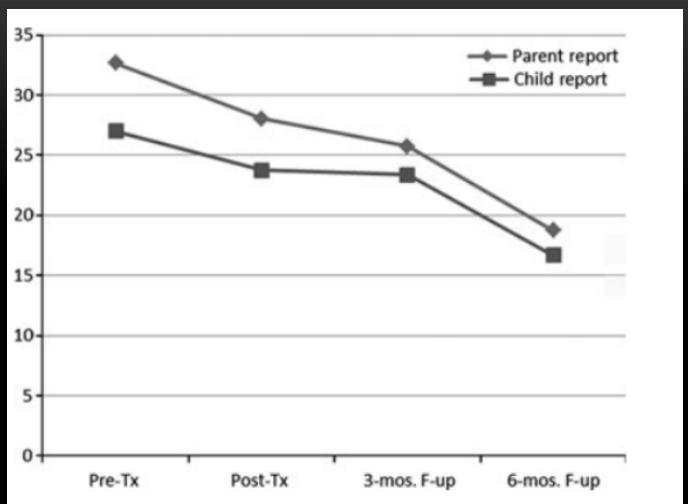

Figure 2 Parent and child report of total anxiety symptoms on the Screen for Child Anxiety and Related Emotional Disorders (SCARED) ratings for the Facing Your Fears (FYF) condition: pre-, post-, 3-month and 6-month follow-up

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OTHER OPTIONS (MOST BASED ON CBT/PSYCHOED/GRADED EXPOSURE)

Adaptations of Existing Protocols for ASD

- Coping Cat (Kendall, 1994; MaNally Keehn et al., 2013)
- Cool Kids (Barrett et al., 2003; Chalfant et al.,, 2007)
- Building Confidence (Wood & McLea, 2008; Wood et al., 2009-2019)

Programs Specific to ASD

- Exploring Feelings (Attwood 2004)
- Multimodal Anxiety and Social Skills Intervention (MASSI; White et al., 2013)
- Facing your Fears (Reaven et al., 2011)

*slide from Reaven: Facing Your Fears presentation, 5/27/20

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ASSESSING SOCIAL SKILLS

- Social Responsiveness Scale 2 (Constantino, 2012)
- Vineland Adaptive Behavior Scales 3rd edition (Sparrow et al., 2018)
- Adaptive Behavior Assessment System 3rd edition (Harrison & Oakland, 2015)

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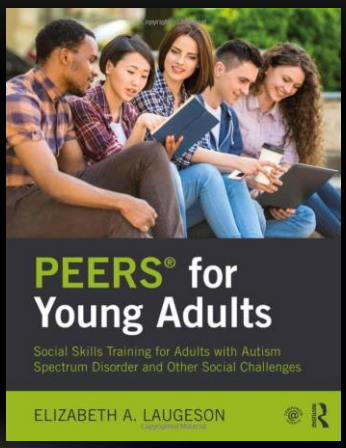
PEERS

Three levels of training

- PEERS for Preschoolers
- PEERS for Teens
- PEERS for Young Adults



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PEERS

- Evidence-based
- Includes parents throughout treatment
- Structured like a class, not a therapy group
- Breaks down social skills into understandable steps
- Teaches ecologically valid social skills Generalizes social skills to “real life” settings
- Manualized (14 weekly sessions)

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Table 1 PEERS sessions and content

Session	Didactic
1	Introduction and conversational skills I: trading information
2	Conversational skills II: Two-way conversations
3	Conversational skills III: Electronic communication
4	Choosing appropriate friends
5	Appropriate use of humor
6	Peer entry I: entering a conversation
7	Peer entry II: exiting a conversation
8	Get-togethers
9	Good sportsmanship
10	Rejection 1: teasing and embarrassing feedback
11	Rejection II: bullying and bad reputations
12	Handling disagreements
13	Rumors and gossip
14	Graduation and termination

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PEERS OUTCOMES: LAUGESON ET AL., 2012, JADD

- Parallel groups design
- N=14 in PEERS Group (mean age 15.0)
- N=14 in Wait-list Control Group (mean age 14.3)
- Groups of 4-6 individuals
- 14 Weeks of treatment (one group for teens, one for parents)
- Outpatient treatment model

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Table 3 Mean difference scores for outcome variables for treatment and delayed treatment control groups (standard deviations are in parentheses)

Variable	Group		*p*
	Treatment $n = 14$	Delayed treatment $n = 14$	
Teen measures			
TASSK-R	9.14 (2.07)	0.71 (3.05)	<.01
QPQ-A host	4.43 (6.90)	0.29 (0.83)	<.03
Parent measures			
QPQ-P host	1.57 (1.83)	0.21 (0.70)	<.01
SSRS-P social skills total	11.77 (5.86)	0.71 (10.25)	<.01
SSRS-P cooperation	2.69 (2.02)	0.07 (2.50)	<.01
SSRS-P assertion	3.31 (2.18)	0.64 (3.00)	<.01
SSRS-P responsibility	2.54 (1.98)	−0.36 (3.71)	<.02
SRS-P total	11.54 (6.96)	1.43 (7.74)[a]	<.01
SRS-P social awareness	18.38(9.53)	6.14 (10.3)[a]	<.02
SRS-P social cognition	9.00 (7.53)	−0.14 (8.55)[a]	<.02
SRS-P social communication	12.92 (7.74)	0.29 (9.55)[a]	<.01
SRS-P social motivation	8.08 (8.70)	−1.14(10.70)[a]	<.05
SRS-P autistic mannerisms	10.69 (8.95)	2.71(6.70)[a]	<.05

[a] $n = 7$

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OTHER SOCIAL SKILLS TRAINING PROGRAM OPTIONS

- Scott Bellini: Social Skills Training; Building Social Relationships
- Michelle Garcia Winner: Social Thinking
- Jeanette McAfee: Navigating the Social World

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REMAKING RECESS (KRETZMANN ET AL., 2015, BEHAVIOR THERAPY)

- Directed at training paraprofessionals
- 16-week intervention
- Identifying children who were unengaged
- Staff modeled strategies to help children engage with each other
- Taught paraprofessionals to gradually fade assistance
- Manual available: http://www.remakingrecess.org

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STUDY AND RESULTS

- Elementary school recess (4 schools)
- 11 wait-list; 13 active treatment
- 3 weeks active training/feedback/modeling with paraprofessionals
- 10 weeks of intervention

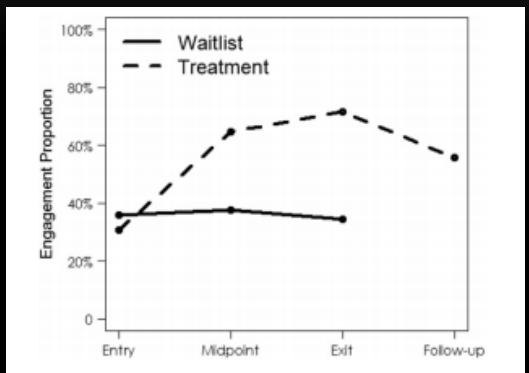

FIGURE 2 Peer engagement at entry, midtreatment, and exit for IT and WL groups, and follow-up over 10 weeks for the IT group.

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SUMMARY

- Children with ASD have high rates of comorbid behavioral disorders, including ADHD and Anxiety
- Also have significant social skills deficits
- A number of evidence-based treatments available that can be adapted for schools
- Included are parent training and adaptive strategies for ADHD
- CBT-based programs are available for anxiety
- Social skills programs are available to address social and play deficits

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Thank You

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