

# Friendship in Children & Adults with ASD

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# What is Friendship?



- A special type of peer relationship characterized by:
  - Closeness & trust
  - Mutual affection
  - Companionship & preference
  - Interactions over time
  - Reciprocity



# Why is Friendship Important?

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- Friendships promote:
  - Positive social, cognitive, and emotional development
  - Greater well-being and happiness
  - Greater sense of belonging
  - More positive perceptions of school
  - Stronger academic performance



(Hamm & Faircloth, 2005; Hartup & Stevens, 1999; Hodges et al., 1999; Ladd, 1990; Wentzen & Caldwell, 1997)

# Friendship in Children with ASD

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- Compared to others, children with ASD have:
  - Fewer friends
  - Less closeness and companionship in friendships
  - Briefer friendships
  - Fewer get-togethers and shared activities
  - Higher rates of social exclusion & bullying



(Bauminger & Shulman, 2003; Dean et al., 2014; Koning & Magill-Evans, 2001; Locke et al., 2010, Petrina et al., 2014)

# Friendship in Children with ASD

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- Children with ASD also report greater loneliness than children without ASD
- Loneliness in children with ASD is associated with lower self-worth and greater anxiety

## ***What is Loneliness?***

Unhappiness due to lack of friends  
or companionship

# Study 1: Friendship & Emotional Functioning

Mazurek & Kanne (2010)

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- Children and adolescents with ASD are at high risk for anxiety and depression
- In children without ASD, having **at least one good friend** leads to:
  - Less anxiety, depression, and loneliness
  - Greater self-esteem and well-being

## *Question:*

Does friendship play an emotionally protective role for children and adolescents with ASD?

# Study 1: Methods

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## Participants:

- 1,202 children and adolescents with ASD who were part of the Simons Simplex Collection (SSC) study
  - Ages 4-17
  - Most (86%) were boys

## • Measures

- Child Behavior Checklist (CBCL)
- Autism Diagnostic Interview – Revised (ADI-R)
- Autism Diagnostic Observation Schedule
- IQ Tests

# Study 1: Methods

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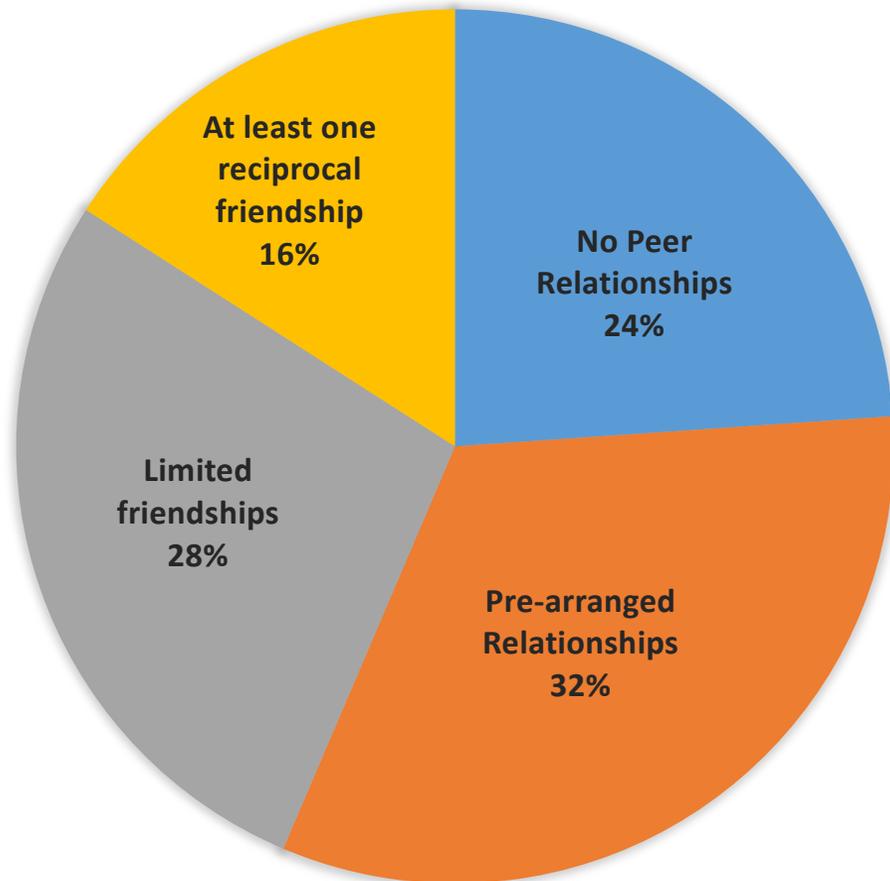
**Friendship Measure:** Parent interview response (*ADI-R item #65*):

- 0** = One or more relationships with same-aged peer(s) that include sharing personal activities and seeing outside of pre-arranged groups. This relationship has clear reciprocity.
- 1** = One or more relationships that have some shared activities outside a pre-arranged group, includes some initiation, but limited in interests or reciprocity.
- 2** = Personal relationships with others that includes seeking contact, but only in groups, school, or work.
- 3** = No peer relationships that involve reciprocity.

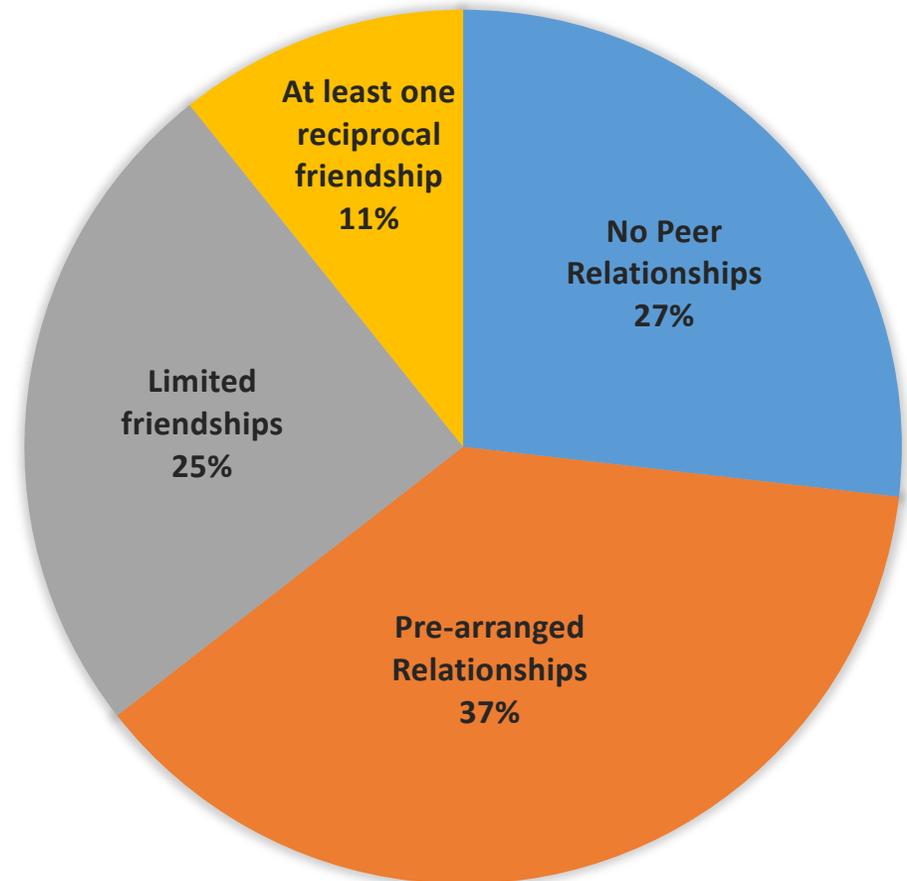
# Study 1: Results

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## BOYS



## GIRLS



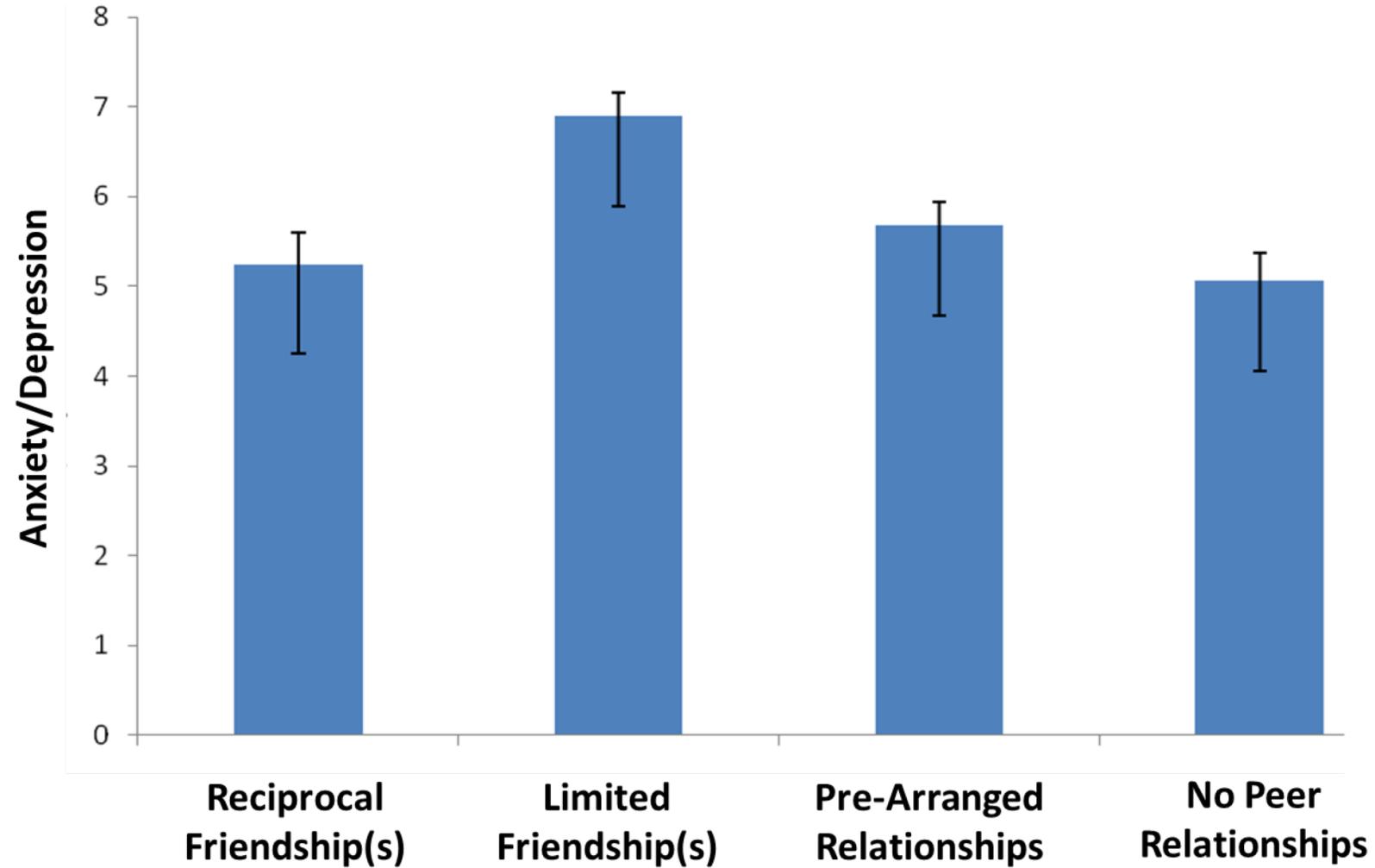
# Study 1: Results

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- Children with lower IQ scores and those with more ASD symptoms were less likely to have friends
- After accounting for IQ and ASD symptoms, friendships *were* related to symptoms of anxiety and depression, however:
  - Children who experienced the most anxiety and depression were those who had friendships that were limited in either responsiveness or reciprocity

# Study 1: Results

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# Study 2: Friendship & Activities

Dovgan & Mazurek (In Press)

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- Children with ASD struggle to develop and maintain friendships
- Extracurricular activities may serve as one opportunity for developing friendships
- Engagement in activities may also enhance well-being and mood

## ***Questions:***

Are children with ASD who participate in extracurricular activities more likely to have friends?

# Study 2: Methods

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## Participants:

- 129 children & adolescents with ASD (6-18 years)
- Mostly boys (86%)

## Measures

- IQ Tests
- Vineland Adaptive Behavior Scales
- Child Behavior Checklist (CBCL)
  - Measure of friendship and activities

# Study 2: Methods

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**Friendship Measure:** *parent response to CBCL item #V1:*

- “About how many close friends does your child have?”
  - Response options are: none, one, two or three, four or more.

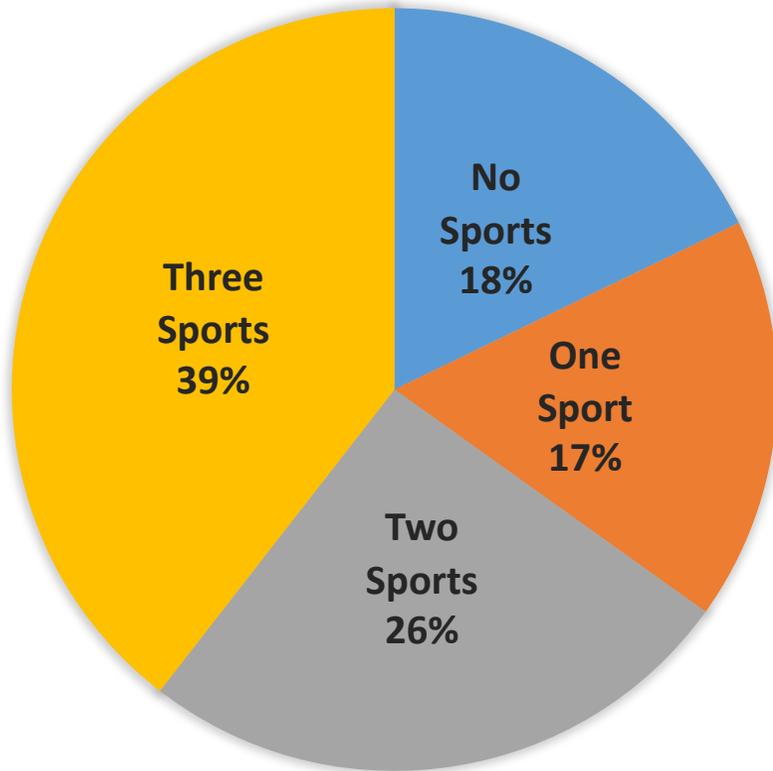
**Activities Measures:** *parent response to CBCL items #I, II, and III:*

- These items ask parents to list activities in which the child participates:
  - Up to three sports
  - Up to three hobbies
  - Up to three clubs.

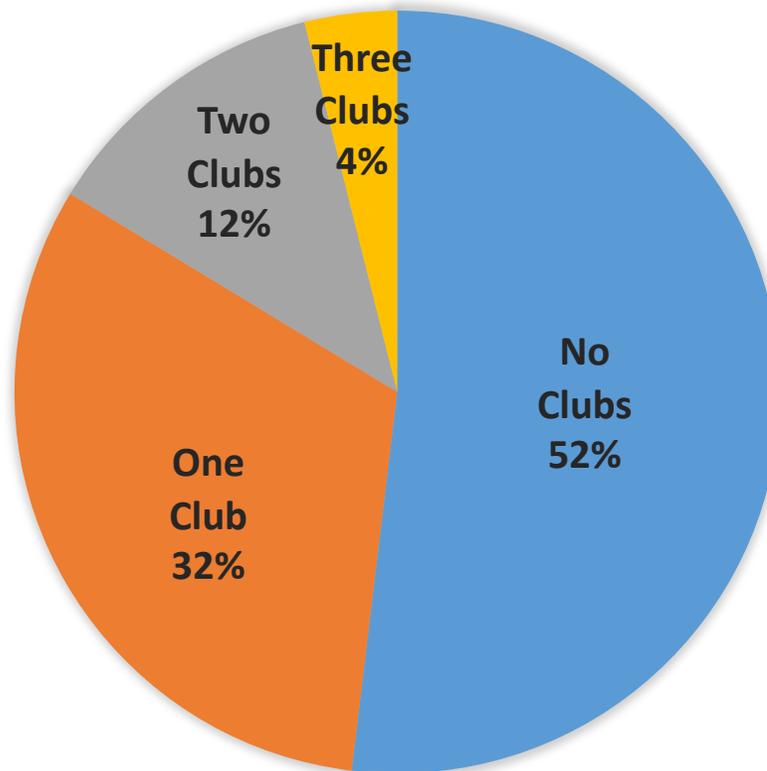
# Study 2: Results

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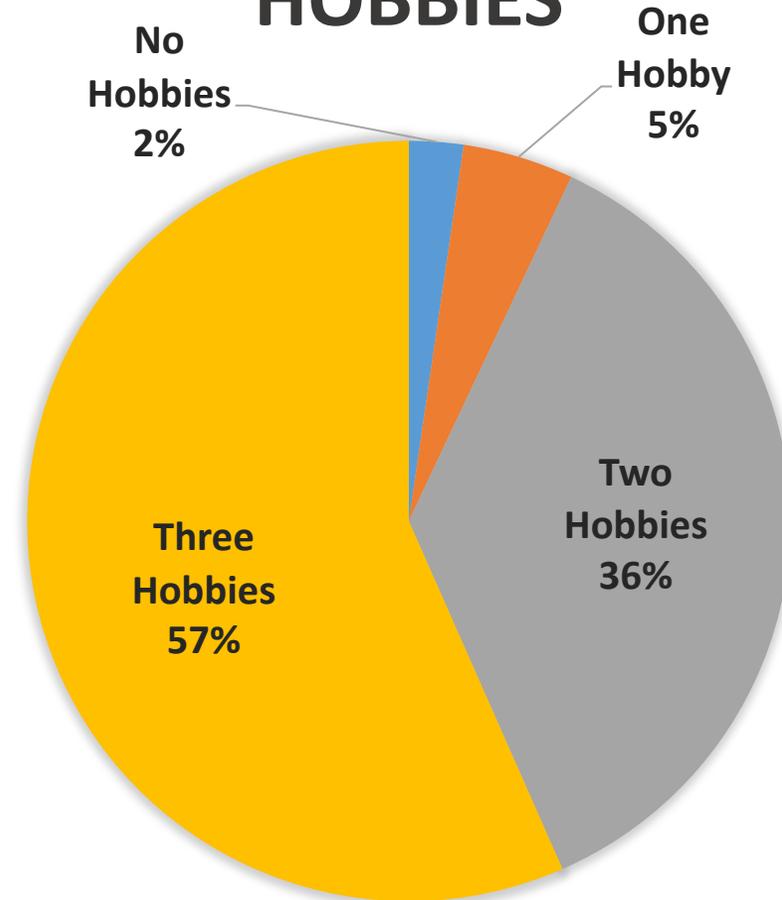
## SPORTS



## CLUBS



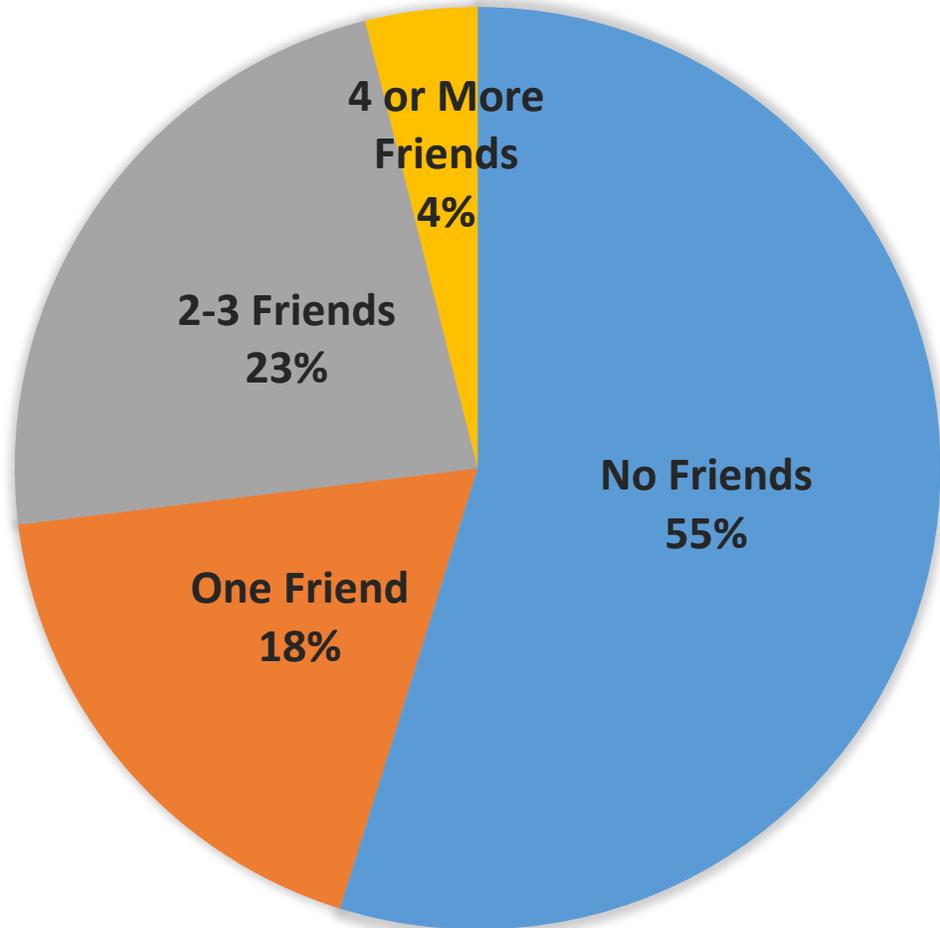
## HOBBIES



# Study 2: Results

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## FRIENDS



- Children with ASD who participated in more activities had more friends
  - Even after adjusting for effects of IQ
- Children with ASD who participated in more activities were more likely to have at least one friend

# Study 3: Friendship in Adults with ASD

Mazurek (2014)

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- Adults with ASD face challenges with day-to-day functioning, and are at high risk for mental health challenges
- Loneliness may contribute to increased anxiety and depression, and may reduce overall well-being among adults with ASD

## *Questions:*

Does friendship play an emotionally protective role for adults with ASD?

# Study 3: Methods



## Participants:

- 108 adults with ASD (ages 18-62); 52.6% men; 47.4% women
- Recruited through the Interactive Autism Network (IAN)

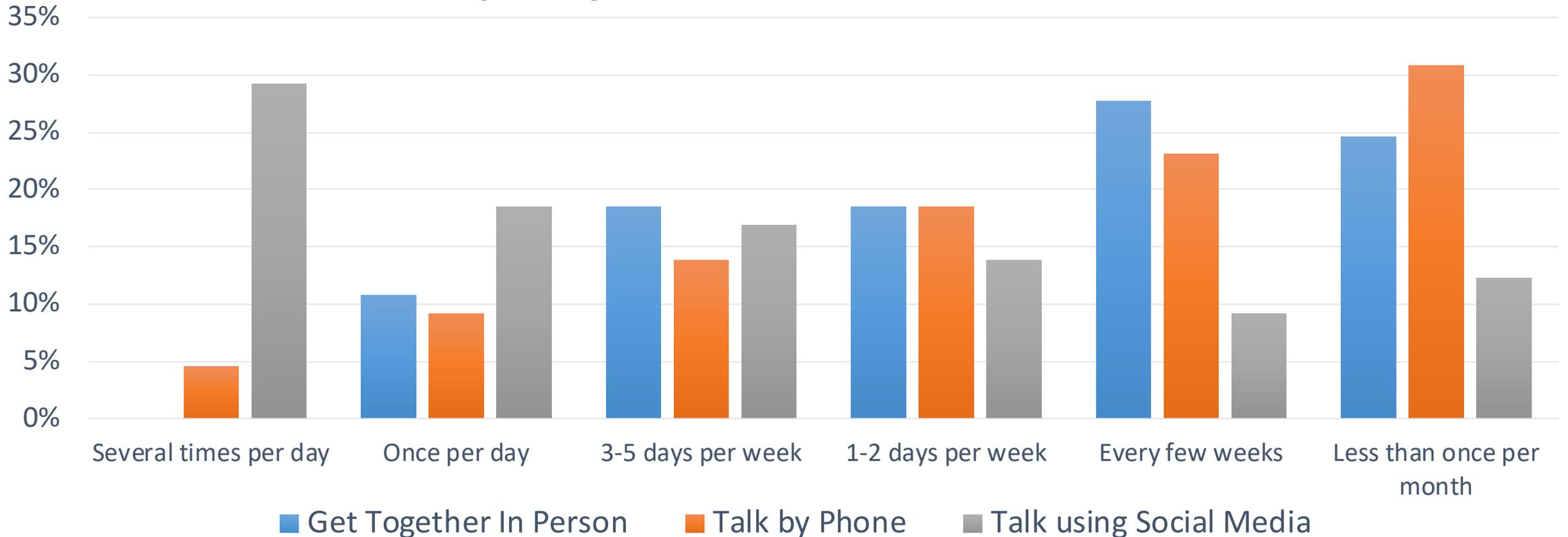
## Measures

- Autism Spectrum Quotient (AQ) Short Form
- UCLA Loneliness Scale
- Unidimensional Relationship Closeness Scale (URCS)
- Satisfaction with Life Scale (SWLS)
- Rosenberg Self-Esteem Scale (RSE)
- Patient Health Questionnaire (PHQ)

# Study 3: Results

60.2% had a close or best friend (39.8% did not)

## Frequency of Contact with Close Friend



# Study 3: Results

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- Adults with ASD with greater loneliness reported:
  - Higher levels of depression and anxiety
  - Less satisfaction with life
  - Lower self-esteem
- Adults with ASD with a close friend reported significantly less loneliness than those without a close friend
  - Greater relationship closeness was associated with even lower levels of loneliness
- A greater number of friends was also associated with less loneliness

# Conclusions

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- Reducing loneliness may help to reduce symptoms of depression and anxiety in individuals with ASD
- Helping to build close and reciprocal friendships may be an important intervention target for enhancing overall well-being in both children and adults with ASD

# Study References

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- Mazurek, M.O. & Kanne, S. (2010). Friendship and internalizing symptoms among children and adolescents with ASD. *Journal of Autism and Developmental Disorders, 40*(12): 1512-1520.
- Mazurek, M.O. (2014). Loneliness, friendship and well-being in adults with autism spectrum disorders. *Autism, 18*(3): 223-232.
- Dovgan, K. & Mazurek, M.O. (In Press). Relations among friendship, activity participation, and internalizing problems in children with autism spectrum disorder. *Autism*.





# Rewiring the social brain & Building social skills across the lifespan

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Associate Professor, Department of Psychiatry

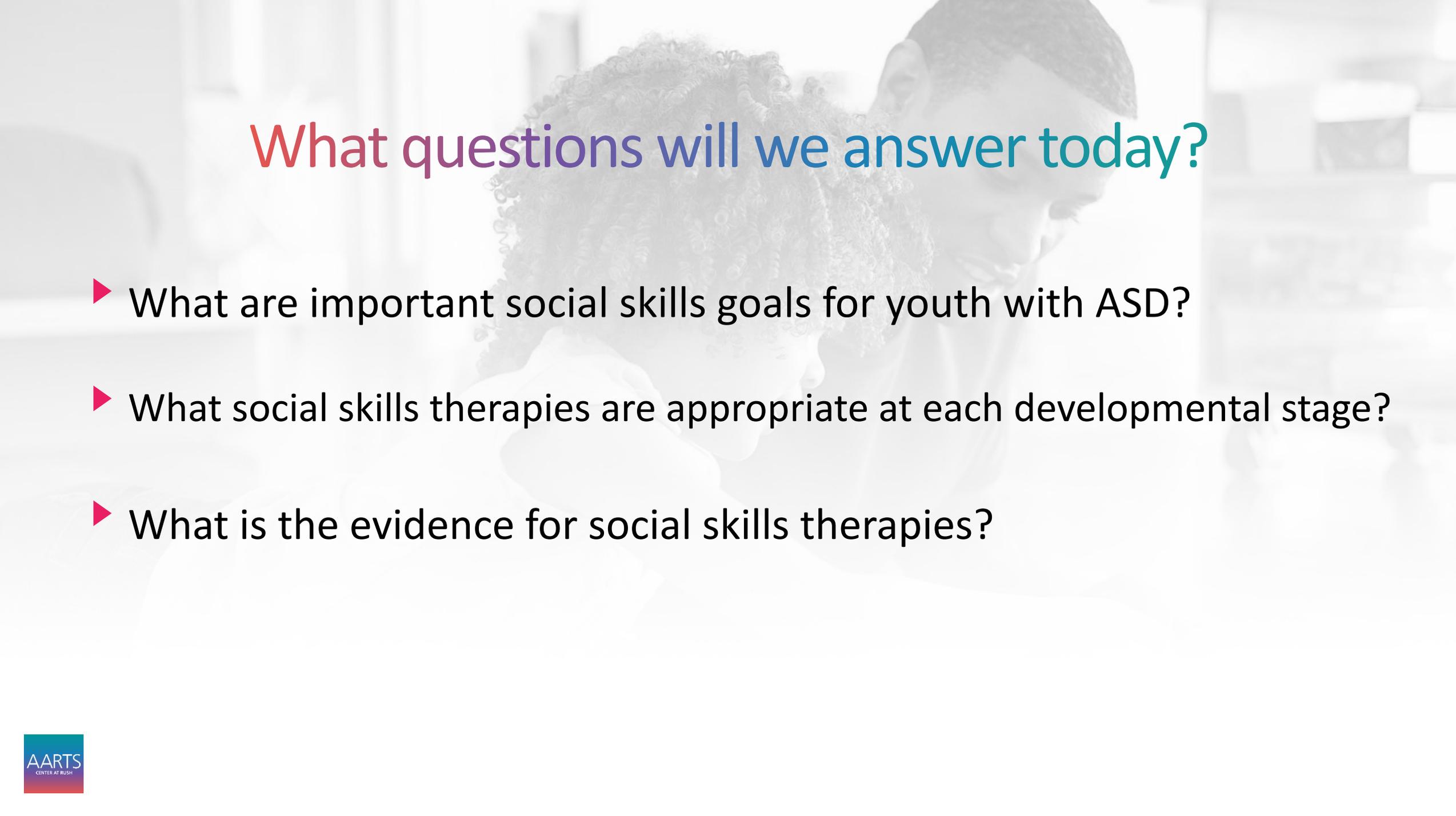
Director, AARTS Center @ Rush



Autism, Assessment, Research, Treatment, & Services Center



RUSH UNIVERSITY  
MEDICAL CENTER



# What questions will we answer today?

- ▶ What are important social skills goals for youth with ASD?
- ▶ What social skills therapies are appropriate at each developmental stage?
- ▶ What is the evidence for social skills therapies?

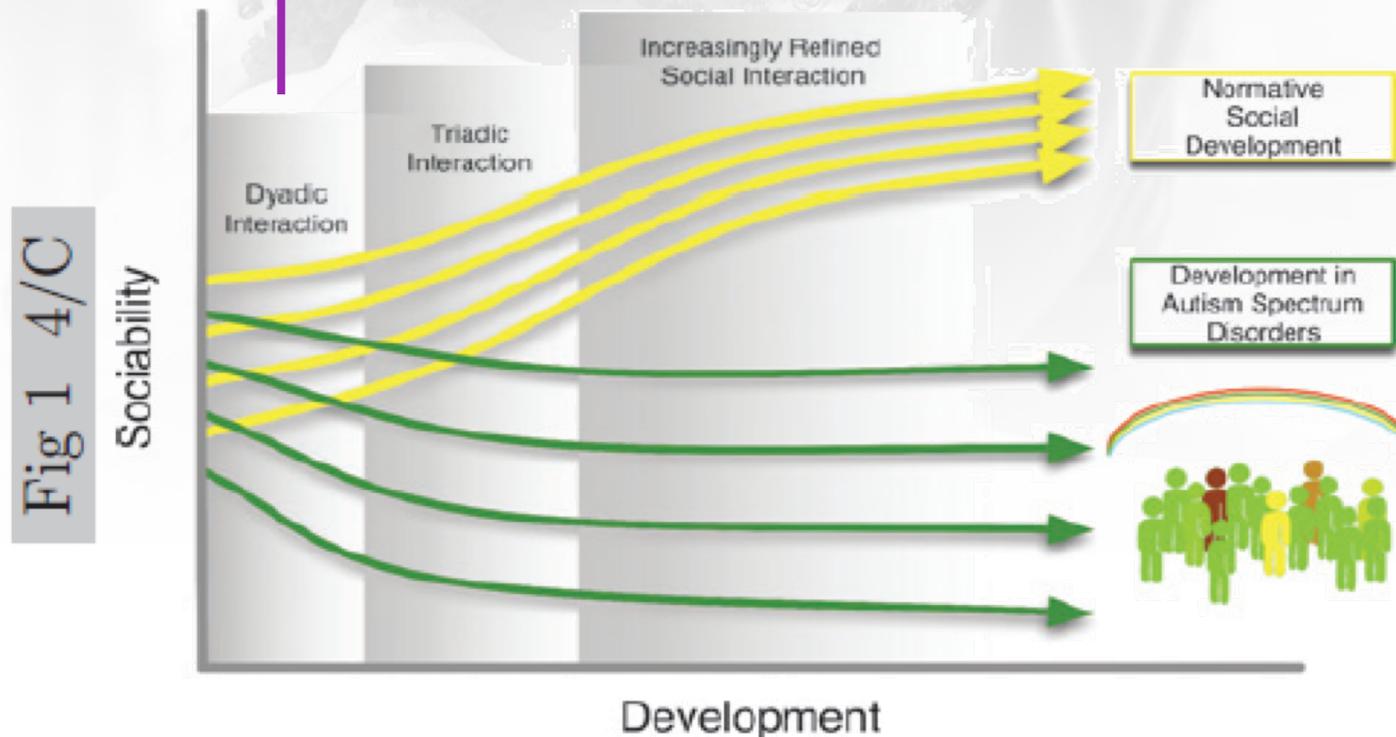


**“The focus should  
be teaching people  
with autism to  
adapt to the social  
world around them,  
while still retaining  
the essence of who  
they are, including  
their autism.”**

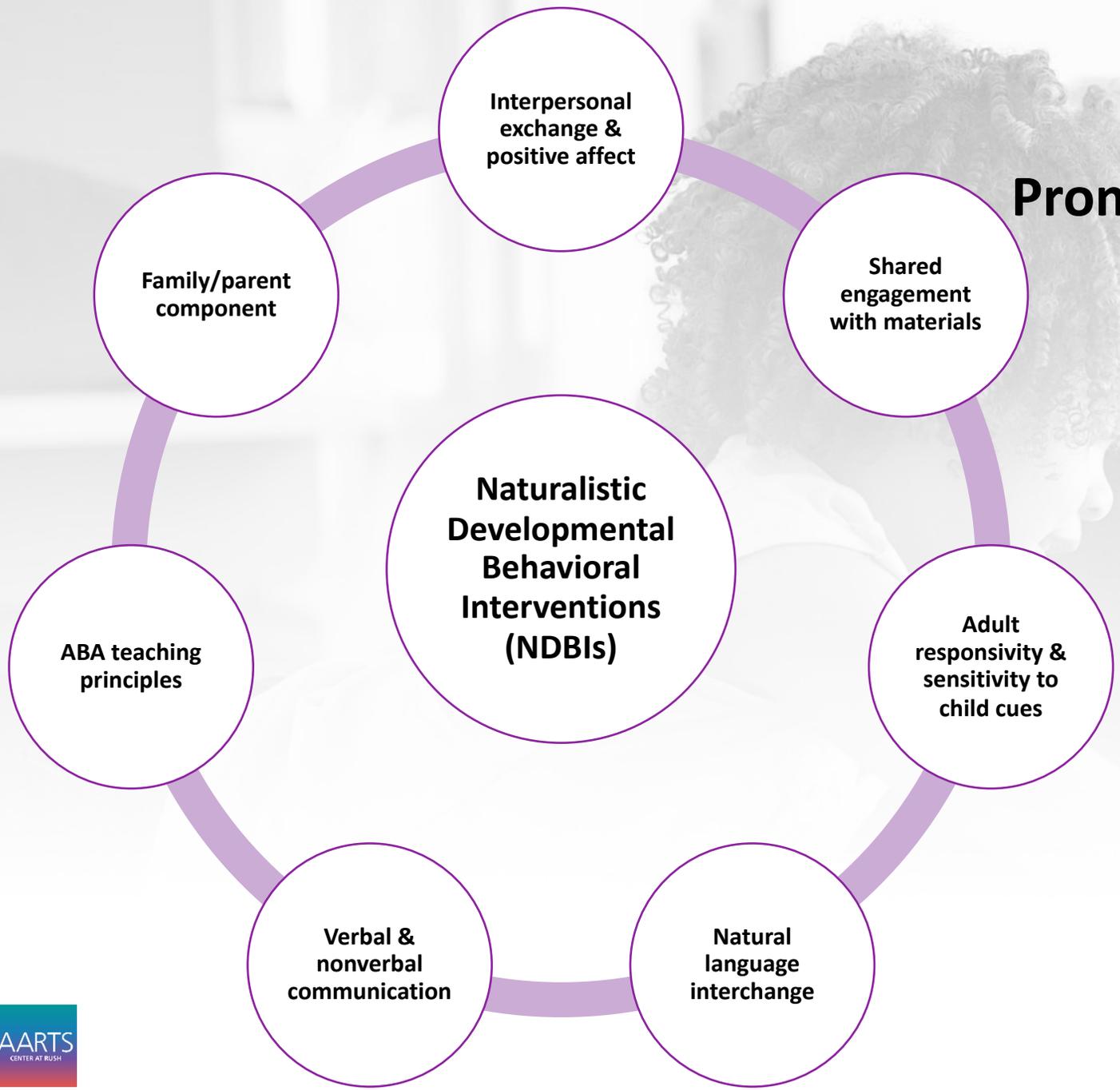
dr. temple grandin

# Goals of social skills therapies

In early childhood, focus is on building functional, spontaneous communication with others



# Early childhood goals: Promoting early, critical social skills



Early Start Denver Model



Online Early  
Intervention:  
Reciprocal imitation  
Training

10-week e-health intervention:  
Making parent-child playtime fun



**Mirror Me Study**

PI: Allison Wainer, PhD

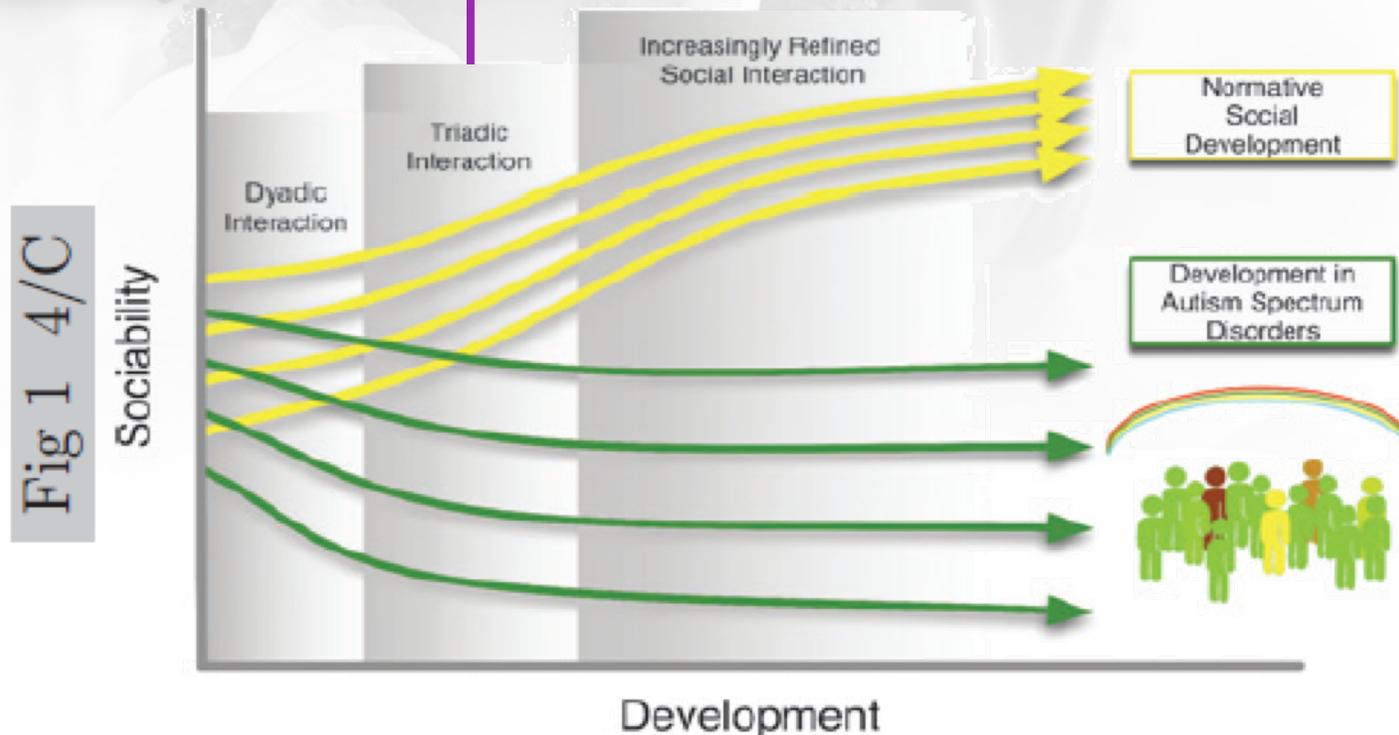
- Children 16 to 60 months with (or suspected) ASD
- Target: social imitation difficulties
- Parents participate in a brief *online* parent training program teaching play skills



# Goals of social skills therapies

In early childhood, focus is on building functional, spontaneous communication with others

In middle childhood, consider ASD as a social learning disability. This means social skills are ideally taught daily, across settings, and using developmentally appropriate methods with peers.



# Social goals in school-aged children

- Academic integration & enhancement
- Peer relationships
- Family/sibling dynamics
- Health
- Life skills
- Mental health



# Peer Mediated Interventions



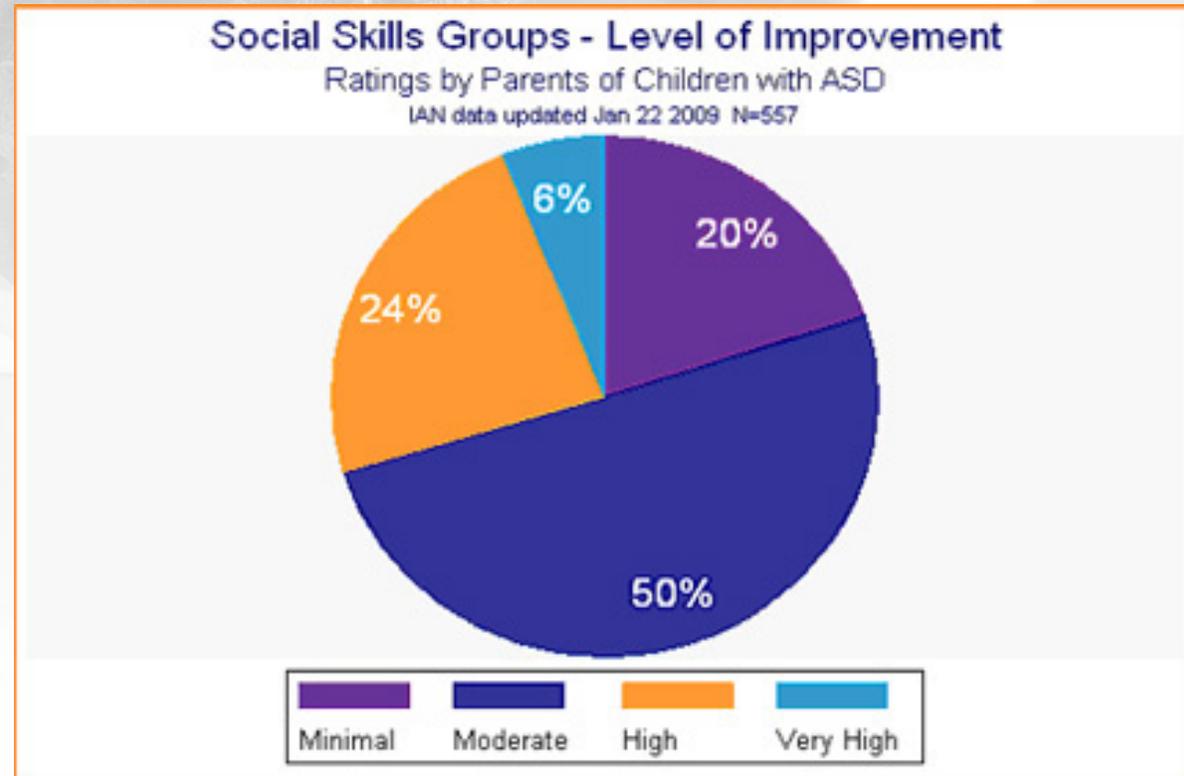
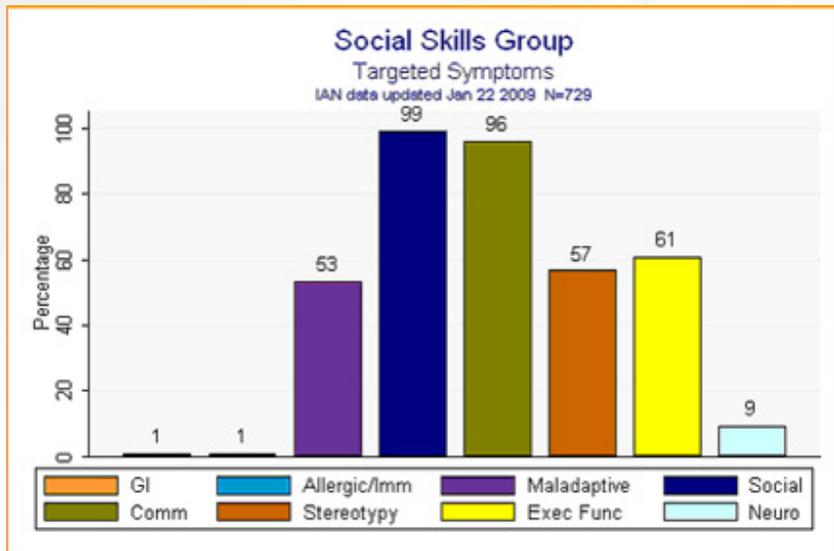
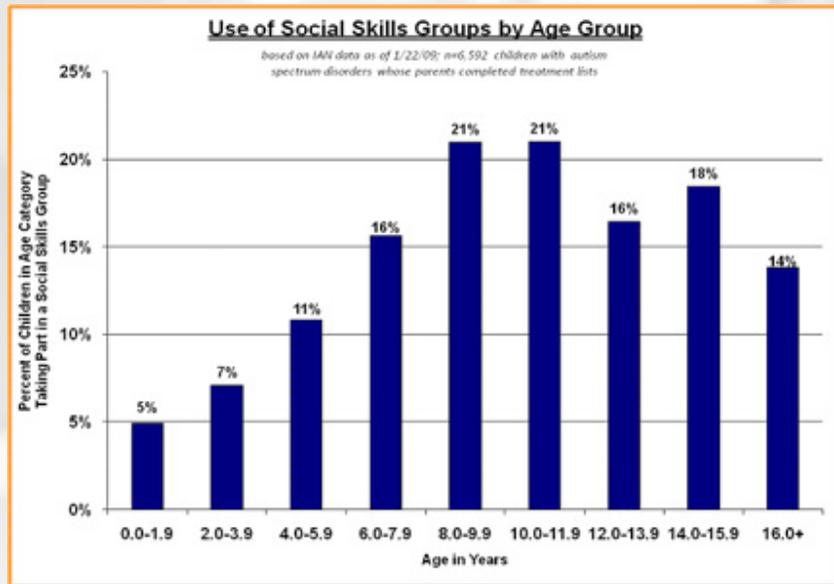
- **Peer network** (Haring & Breen, 1992)
  - peer networks = *existing cliques of same-aged peers providing prompting and reinforcement for social interactions.*
  - Peer networks have been shown to aid in promoting social integration of children with disabilities
- **Peer Mediated interventions**
  - Neuro-typical peers are taught to initiate and respond positively to peers with ASD
  - Enhances performance
    - Decreases anxiety
    - Improves generalization
  - Provides opportunity for adults to remain as facilitators rather than playmates
    - Examples: lunch bunch, after school programs, facilitated play dates

Kasari, Rotheram-Fuller, Locke, & Gulsrud (2012). Making the connection: Randomized controlled trial of social skills at school for children with autism spectrum disorders. *JCCP*, 53(4), 431-29.

# Asd is a social learning disability

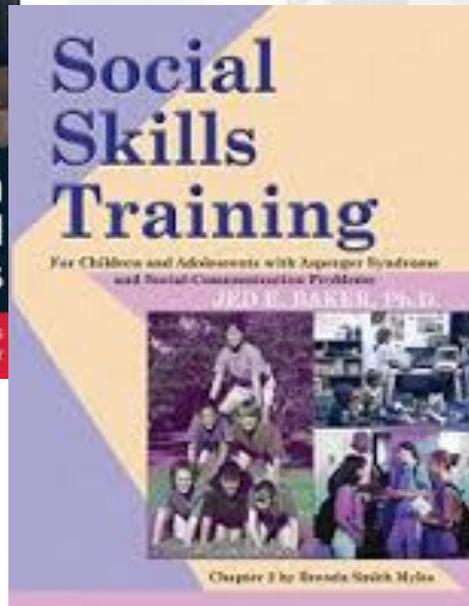
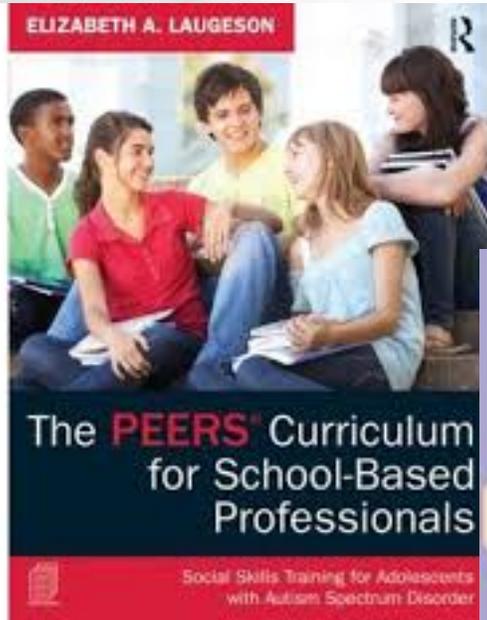
- Deficits that can be either due to an acquisition or performance deficit
- Highly contextual & best taught in natural settings/situations
- Skills that should be taught using same procedures used to teach academic skills
  - Provide instruction in core deficits (e.g. emotion recognition)
  - Use compensatory strategies (e.g. visual aides)
  - Evaluate curriculum specific goals and normative (i.e. developmental) standards
  - Suggests treatment important in academic settings

# Social Skills Groups: Popular but Effective?



*Interactive Autism Network (IAN) Research Findings: Social Skills Groups (2/2009)*

# SOCIAL SKILLS Training (SST) Groups

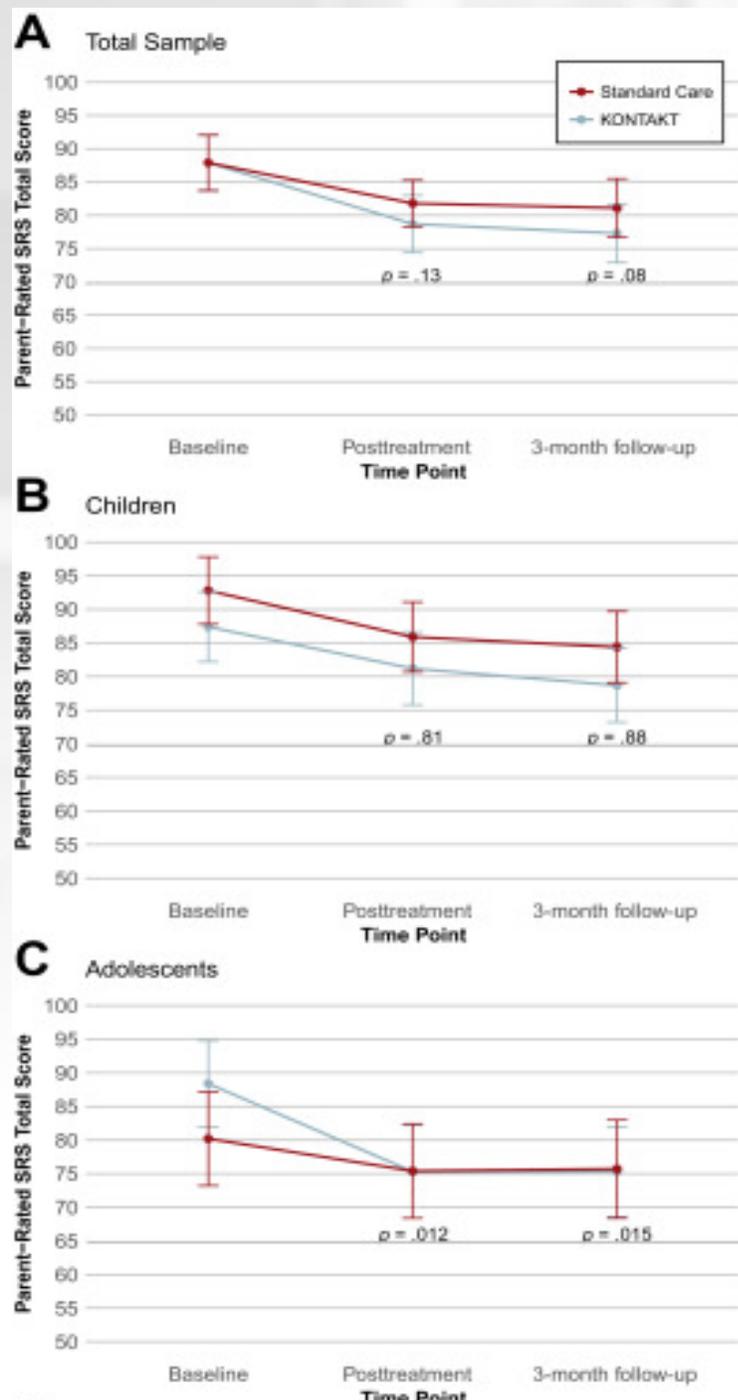
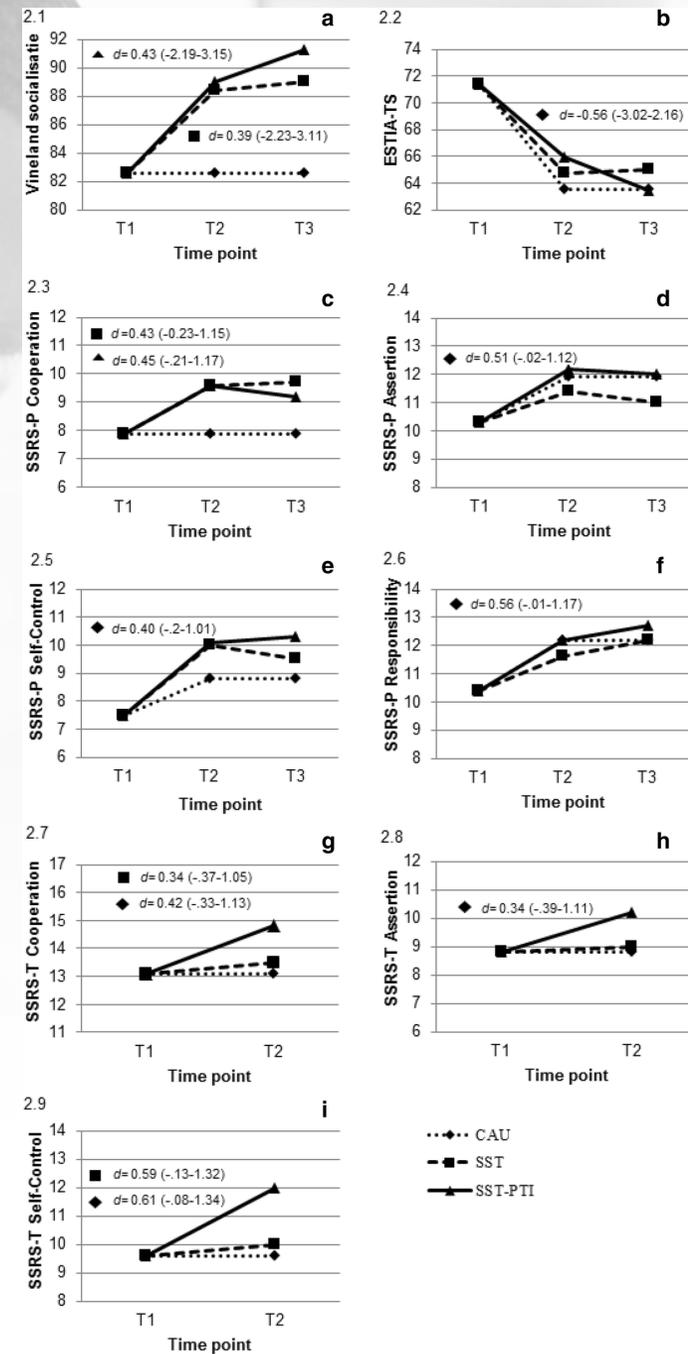


1. **Set Goal-** Choose and clearly define a manageable social skills goal.
2. **Teach-** Explain what behavior looks like and why behavior is important
3. **Model-** Demonstrate the desired social behavior.
4. **Practice-** Role-play the desired behavior.
5. **Prompt-** Prompt for a natural display of desired behavior.
6. **Reinforce-** Reinforce group members after the demonstrate desired behavior.
7. **Generalize-** Encourage practice of the behavior outside the group

# SST Group Evidence

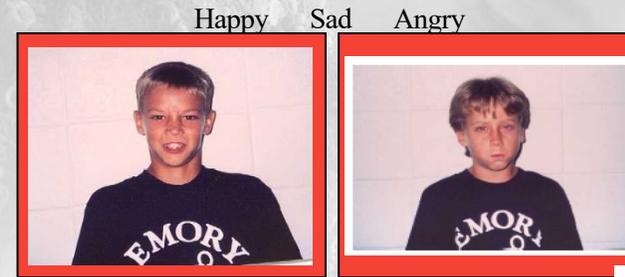
- 15-week trial
  - SST, treatment as usual (TAU), and SST with parent training (PT)
- Responders
  - SST > TAU in adolescents
  - SST > TAU in females
- Maintenance
  - Effects were not maintained at 3-month follow-up
- Generalization
  - Teachers reported improvements only after SST+PT

Choque Olsson, Nora et al. (2017). Social Skills Training for Children and Adolescents With Autism Spectrum Disorder: A Randomized Controlled Trial. *JAACAP*, 56(7), pp 585-92.; Dekker, V., Nauta, M.H., Timmerman, M.E. et al. *Eur Child Adolesc Psychiatry* (2018). <https://doi.org/ezproxy.rush.edu/10.1007/s00787-018-1205-1>



# Social Cognition Difficulties in Youth with ASD

- Difficulty identifying emotions



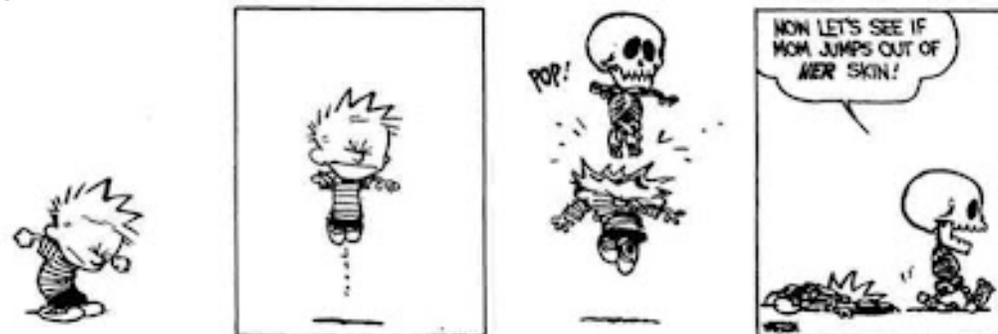
- Ability to attribute beliefs, thoughts, feelings, plans, intentions to ones self or others

(Frith, 2001, Baron-Cohen et al, 1985)



- Impaired understanding of nonliteral language

(Happe et al., 1993; Martin & McDonald, 2004)



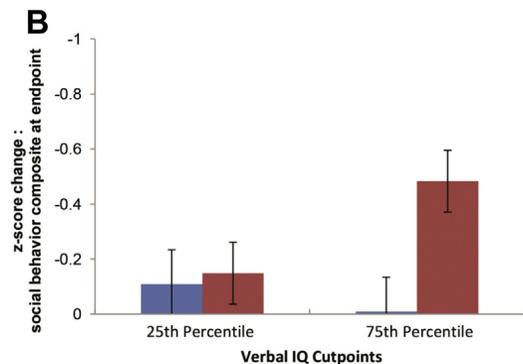
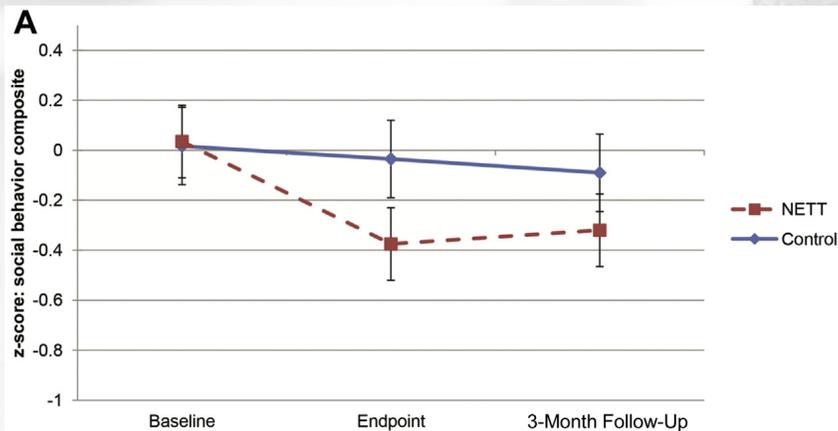
# Outcomes from Social cognitive Therapies

## NETT: Nonverbal synchrony, Emotion recognition, & Theory of mind Training

A cognitive behavioral therapy for social cognitive skills in children with ASD

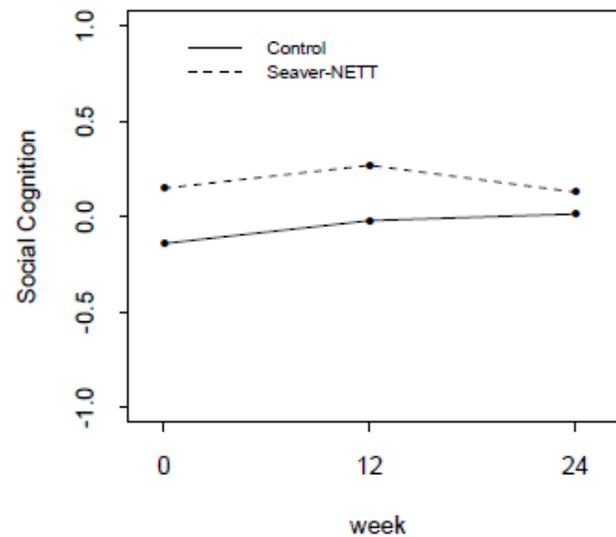
### Social behavior

Week 12:  $B = -0.31$ ,  $SE = .14$ ,  $p = .04$ , Cohen's  $d = .88$



### Social cognition

$B = -0.00$ ,  $SE = .13$ ,  $p = .98$

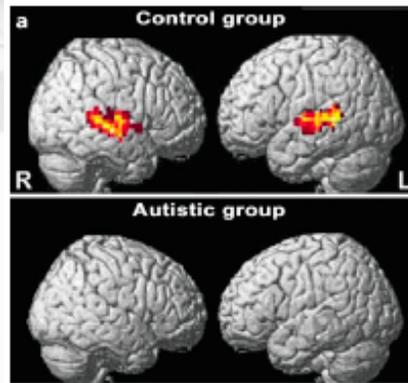


- Immediate improvements in social behavior after 12 sessions
- Responders: children with higher verbal IQs

Soorya, et al. (2015). Randomized comparative trial of a social cognitive skills group for children with autism spectrum disorder. *JAACAP*, 54(3), pp. 208-216.

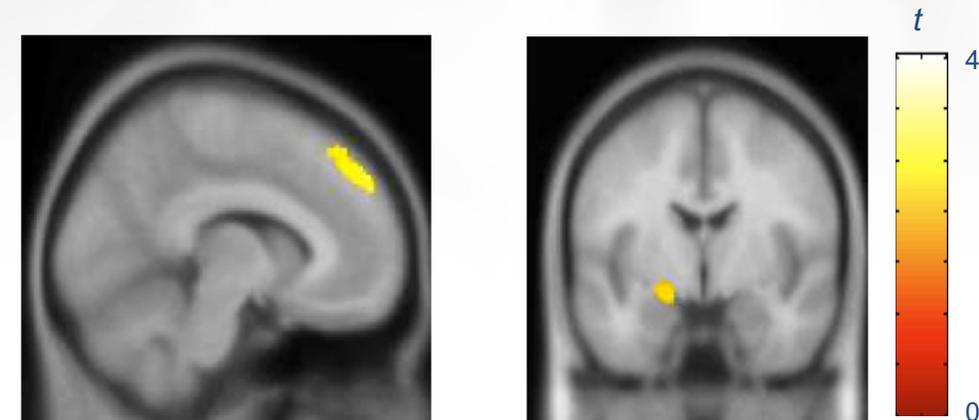
# Brain correlates of Social Deficits

- Adults with ASD show abnormally low activation in the **fusiform gyrus (FG)** when viewing faces (Schultz et al., 2000; Pierce et al., 2001; Hubl et al., 2003)
- Fail to activate voice-selective regions in the **superior temporal sulcus** despite showing normal activation in response to nonvocal sounds (Gervais et al., 2004)
- Reduced activation in the **medial prefrontal cortex (MPFC)** during 'theory of mind' tasks (Happe et al., 1996; Castelli et al., 2002)



Neural changes associated with  
NETT social cognitive groups  
(Wang, et al, 2012)

NETT- Control: Post – Pre



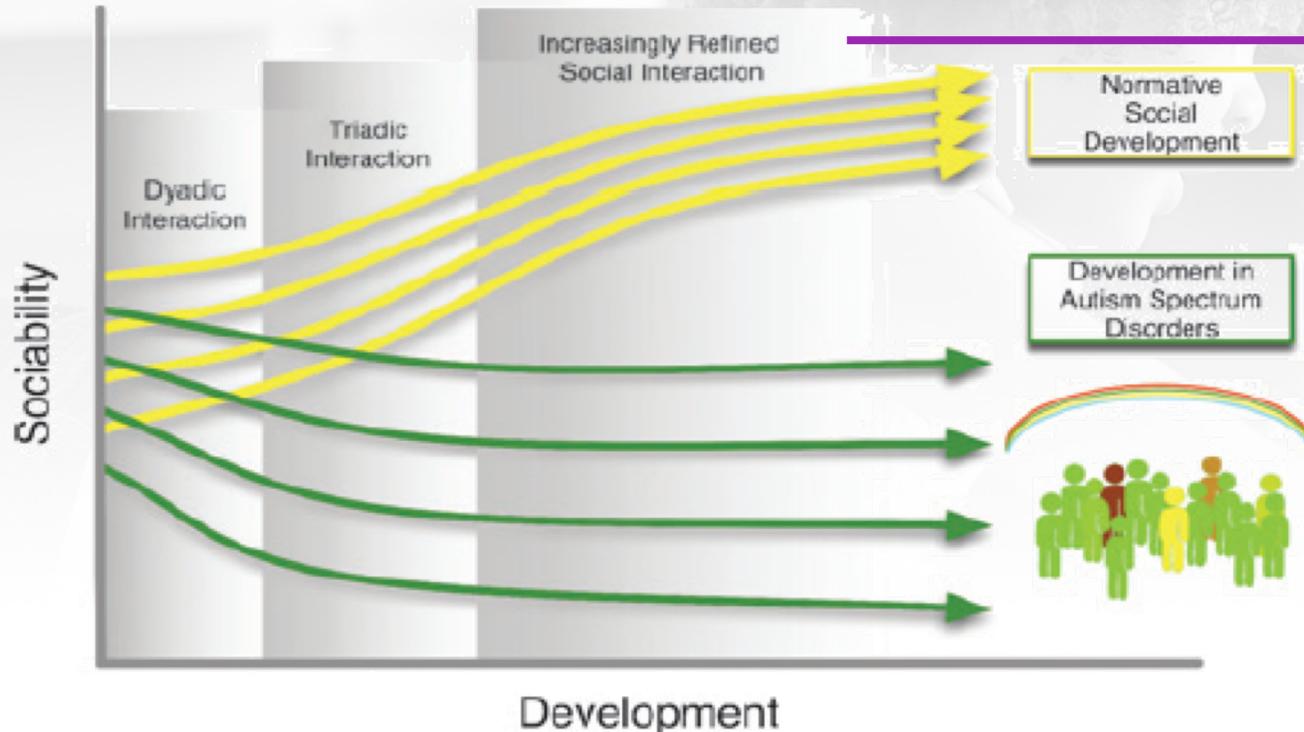
MPFC

# Goals of social skills therapies

In early childhood, focus is on building functional, spontaneous communication with others

In middle childhood, consider ASD as a social learning disability. This means social skills are ideally taught daily, across settings, and using developmentally appropriate methods with peers.

Fig 1 4/C



In adolescence & adulthood, building independence and social skills requires individual, familial, and societal solutions.



# What we know about adults with ASD

- ▶ Stable symptoms in 80%, notable improvements in 10% (Gotham, et al., 2012)
- ▶ Predictors of outcome (Howlin, 2013, Taylor & Seltzer, 2011)

## Social factors

- Parental involvement

## Individual variables

- IQ & Language
- Peer relationships



## US GAO Roundtable (2016): Five goals for adulthood

- ▶ Postsecondary education
- ▶ Employment
- ▶ Maximizing independent living
- ▶ Health & Safety
- ▶ Maximizing community integration

# Building complex treatments for a complex condition

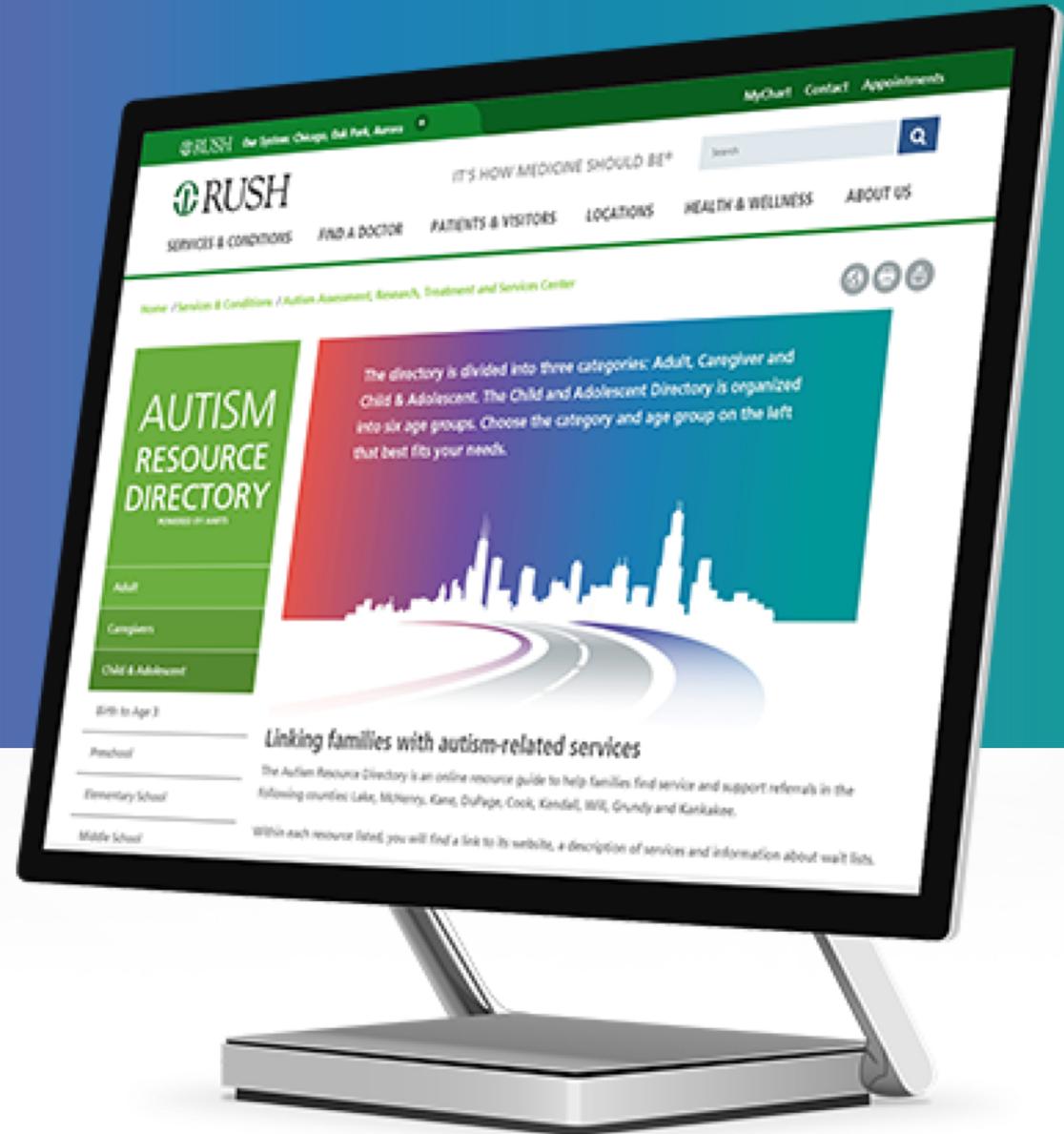
- ▶ Lifespan treatment model
- ▶ Augment/Optimize Interventions
  - ▶ Combining behavioral & medication treatments
  - ▶ Leveraging technology

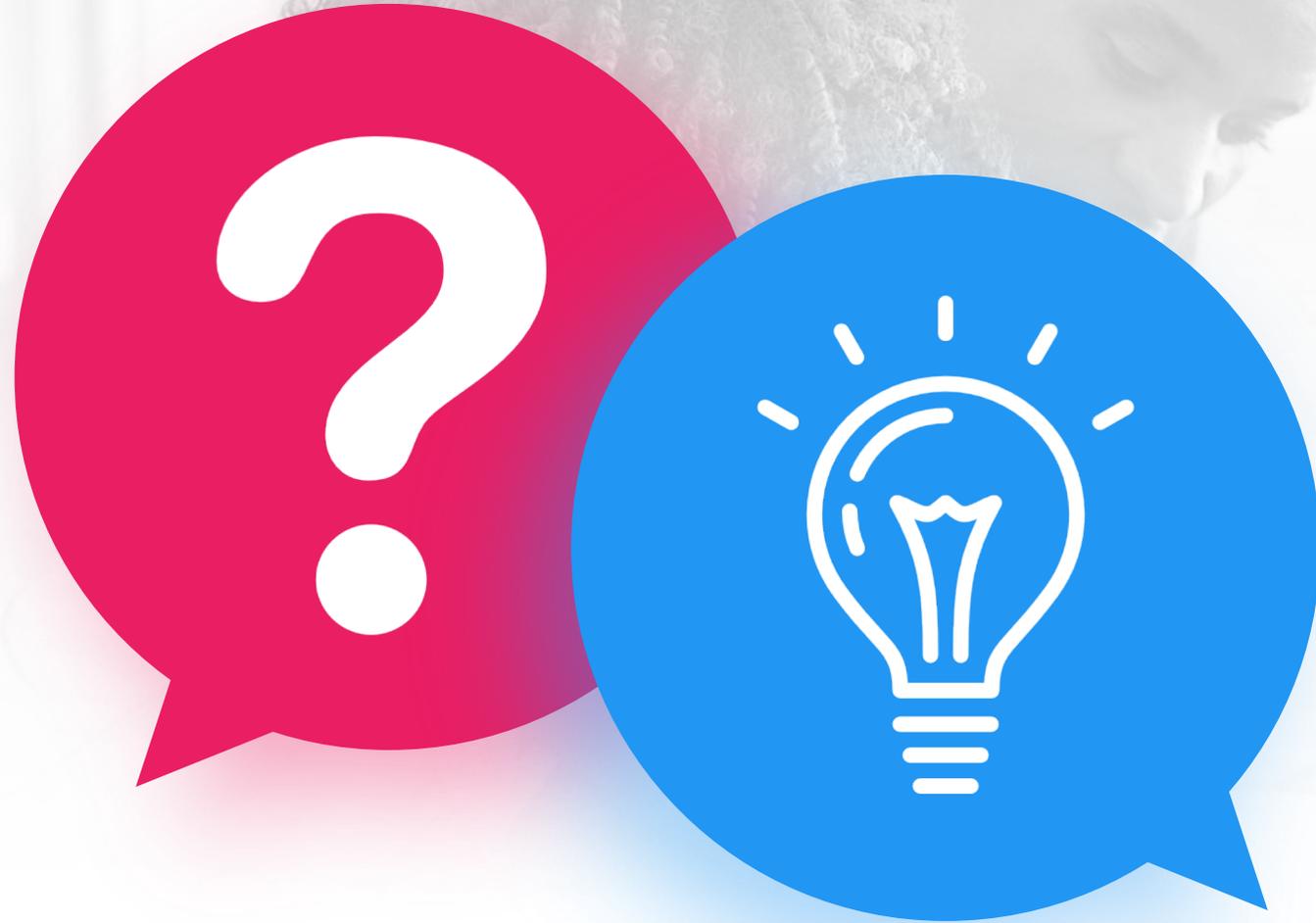


Autism Resource Directory:  
312-563-2272

AARTS Center:  
312-942-0819

[www.aartscenter.org](http://www.aartscenter.org)  
[www.rush.edu/autism](http://www.rush.edu/autism)





Autism, Assessment, Research, Treatment, & Services Center



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