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LOOKING AT YOU LOOKING AT ME

Conditioning Eye Contact and Social Stimuli to be Reinforcers and Establishing Joint Attention

Presented by
Pam Lawrynowycz MA, BCBA
Lisa Kota MADS, BCBA
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Follow up with a BCBA/BCBA/BCBA, D. It is recommended to develop a specific plan for your child or student.

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What is Joint Attention

- The capacity to use eye contact and cues to coordinate attention with another person in the sharing of an experience (such as an interesting object or event)

(Mundy, Sigman, & Kasari, 1994).

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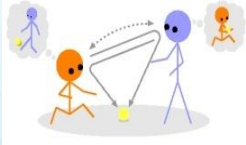
What is Joint Attention

"Joint attention can be conceptualized as another form of social interaction, in which an interesting event or adult's presence serve as a motivating function for responses that serve to obtain adult-mediated social consequences"

Teaching joint attention skills to adolescents and young adults with autism using multiple exemplars and script-fading procedures (Reeve et al., 2019)

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"Triad" of Joint Attention



Child shifts his attention between an object or event and another person. Three participants are involved in this "triad" of attention – the child, you, and the item/occurrence. There's mutual focus.

Joint Attention

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- Typical children often develop these skills without systematic teaching because they value social reinforcers. This suggests the function of joint attention is social.
- Many children with ASD fail to develop these skills without explicit teaching paired with tangible reinforcers since social consequences have been unlikely to be established reinforcers.
- If social consequences are not established as reinforcers early in a child's learning history, we may miss opportunities to teach joint attention skills to that child.

(Reeve et al., 2019)

Importance of Joint Attention

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Serves an important social function even before language begins (Carbone, V. J., O'Brien, L., Sweeney-Kerwin, E. J., & Albert, K. M. 2013).

Important for the development of vocabulary

Important for educational gains of children with autism due to the relationship between eye contact and attending to the teacher and instructional demands (Carbone, V. J., O'Brien, L., Sweeney-Kerwin, E. J., & Albert, K. M. 2013).

Important for perspective taking

Importance of Joint Attention

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- Need to attend to what other people are attending to, to learn from other people
- Need to learn to co-ordinate their attention with other people
- Once we learn to follow the gaze and attention of someone else, we learn to generate language and bids and to develop capacity to express ourselves and share our point of view

JASPAR video North Texas ABA

Why ABA Programs Should Teach Joint Attention

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"Development of intervention technologies specifically aimed to produce joint attention holds the potential of a significant breakthrough in interventions for children with autism."

(Holth, 2005, p.162)

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8. Joint Attention is important for all these reasons except...

- A. Joint attending provides information about the environment
- B. Can learn from others when attending to the same item
- C. Two stimuli can jointly control a response
- D. Ability to take part in relationships is influenced by JA

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Levels of Joint Attention



- Triadic Joint Attention
- Dyadic Joint Attention
- Shared Gaze

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Levels of Joint Attention
Triadic

- Triadic joint attention is the highest level of joint attention and involves two individuals looking at an object
- Triadic attention is marked by the individual looking back to the other individual after looking at the object

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Levels of Joint Attention
Dyadic

- Dyadic joint attention is a conversation-like behaviour that individuals engage in
- Infants engage in this behaviour starting at two months of age
- Adults and infants take turns exchanging facial expressions, noises, and in the case of the adult, speech

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Levels of Joint Attention

Shared Gaze

- Shared gaze occurs when two individuals are simply looking at an object
- Shared gaze is the lowest level of joint attention

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9. What is the highest level of joint attention?

- A. Dyadic
- B. Shared Gaze
- C. Quadratic
- D. Triadic

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Joint Attention Skills

| | |
|---|--|
| Social consequences such as faces/smiles and nods function as reinforcers | |
| Follows another's eye gaze | |
| Show another person something | |
| Scans environment | |
| Follow another person's point | |
| Respond to bids for joint attention | |
| Initiate bids for joint attention | |
| Discriminate when to make bids for attention | |

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Joint Attention Program

Establishing Smiles/Nods as Reinforcers

- Typical children are rewarded by smiles and other signs of acknowledgement from adults
- Need to condition smiles and nods as reinforcement
- May be a crucial step to establish these as reinforcers
- This will assist with maintaining the behaviour

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Joint Attention Program

Establishing Smiles/Nods as Reinforcers

Procedure

1. Trainer and child are seated face-to-face at opposite sides of a table
2. Spread approximately 10 small edible reinforcers around the table
3. Any attempt from the child to take pieces from the table should be blocked
4. When the child sits quietly, nod and smile before you let the child take one item
5. If the child does respond, repeat the nod and smile, and prompt the child to take one item from the table

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Joint Attention Program

Establishing Smiles/Nods as Reinforcers

Procedure cont'd

6. Then, as long as you do not nod and smile, block any attempts the child may make to take things from the table, and when you nod and smile, let the child take another item, and so on
7. Vary the time between each time you nod and smile

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Joint Attention Program

Establishing Smiles/Nods as Reinforcers

- An early change in the child's behaviour will be an obvious increase in the child's visual attention to your face
- In addition to nods and smiles, other persons' uttering "yes," "oh," "look at that," and other relevant comments (intraverbals) will also need to be established as conditioned reinforcers in order to establish a general interest in the normal social consequences of engaging in standard "communication."

(Holth, 2016)

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Joint Attention Program

Establishing Smiles/Nods as Reinforcers

Data Collection

- Trial by trial data
- Graph percent correct (out of 20) each session


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Joint Attention Program

Follows Another's Eye Gaze

Procedures

1. Ask where a person is looking
2. Follows eye gaze in various activities



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Joint Attention Program

Shows Item or Event to Adult

Task Objective

The child will show or point to the object/event and look at the adult, alternating gaze between the object/event and the adult

Sample Program Mastery Criteria

Initiates 5 or more per session across 6 sessions

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Joint Attention Program

Shows Item or Event to Adult

S^d for Target Behaviour

Told "Go show _____"

Eventually the S^d · MO for another person's attention

Materials

Materials needed to contrive situations – the child has an item he wants to share or engages in an activity he wants to share

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Joint Attention Program

Shows Item or Event to Adult

Procedure

- Conduct at least 20 trials per session
- The first trainer prompts the child to go show something to the second trainer. The second trainer should provide the reinforcement.
- The second person (the one the child is showing the item or activity to) provides the reinforcement

Second trainer should not ask any follow up questions and only comment/ deliver reinforcement

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Joint Attention Program Shows Item or Event to Adult

Procedure cont'd

1. The child just has to bring the object to the adult and look at the adult
2. Then the child must show or point to the object/event and look at the adult, alternating gaze between the object/event and the adult
3. Then the child should tell the person to look or watch. The child must show or point to the object/event and look at the adult, alternating gaze between the object/event and the adult

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Joint Attention Program Shows Item or Event to Adult

Reinforcement

- Initially tangible reinforcers will have to be delivered with praise. The goal is to condition showing items/activities to someone as a reinforcer.
- Once the child is initiating at least 3 times per session, tangible reinforcement can be faded to an intermittent schedule

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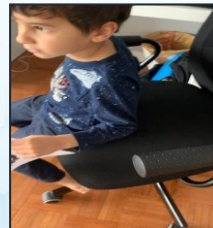
Joint Attention Program Shows Item or Event to Adult

Data Collection

1. Spontaneous initiations
2. Independent scripted

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Video Example



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10. What will maintain “showing” in the natural environment?

- A. Smiles and nods**
- B. Variable ratio schedule of edibles
- C. Delivery of an iPad on a thin variable schedule
- D. Tokens

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11. What might be a good comment?

- A. “Where do turkeys live?”
- B. “Turkeys are brown.”
- C. “What do turkeys eat?”
- D. “Wow! I love the colours!”**

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Joint Attention Program
Scanning the Environment

Have the child tact various items and people in the environment

Following the question “where is ___?” the child will point to the requested item in the environment and look back at the adult for approval

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Joint Attention Program
Scanning the Environment

Procedure

1. Adult asks child “Where is ___?”
2. The child will point to the item in the environment
3. The child will look back at the adult
4. The adult will nod and smile if the child pointed to the right item (and give tangible reinforcement if scheduled)

Aim for 20 trials **interspersed** throughout your session

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Joint Attention Program Scanning the Environment

Prompting

- Use least to most prompting
 - could tap the item
 - model pointing to the item

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Joint Attention Program Scanning the Environment

Prompting

- Do not prompt for child to look back - use shaping
- Do not request "look at me" or any other verbal cue to establish eye contact or move your head to position yourself in the learner's visual line of site

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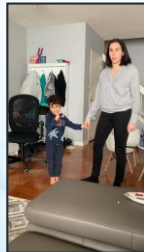
Joint Attention Program Scanning the Environment

Data Collection

- Trial by trial data
- Graph percent correct (out of 20) each session

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Video Example



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Joint Attention Program Following a Point

- Joint Attention Tact
- Identify what someone is pointing at
- Point and say, "Go over there"

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Joint Attention Program Joint Attention - Tact

Task Objective

- When a person points to an object from a distance and asks, "What is it?" the child first turns towards the object, then turns towards the adult and says the name of the object he has contacted with his gaze.

Program Mastery Criteria

- At least 18 out of 20 correct across 3 days

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Joint Attention Program Joint Attention - Tact

S^d for Target Behaviour

- Adult asks, "What is it?"

Teaching Procedure

- Adult points to an item from a distance and asks, "What is it?"
- The child will look at the item, then turns towards the adult and says the name of the object he has contacted with his gaze

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Joint Attention Program Joint Attention - Tact

Correct Response

- The child follows point and tacts the person or item then looks back at the interactive partner

Prompting Procedure

- Use least to most prompting
- Example of prompt tap the item

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Joint Attention Program

Joint Attention - Tact

Shaping Responses

- Do not prompt for child to look back - use shaping
- If he/she doesn't look at you within 5-6 seconds mark it as a no

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Joint Attention Program

Joint Attention - Tact

- Do not- request "look at me" or any other verbal cue to establish eye contact or move your head to position yourself in the learner's visual line of site.
- Maintain a neutral face
- There is no correction for incorrect response because this is a shaping procedure

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Video Example



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12. To teach the child to look back at you

- A. Say "Look at me"
- B. Use shaping. If he doesn't look at you within 6 sec. score N
- C. Gently turn his shoulders
- D. Play audio from his iPad game until he turns and looks

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Joint Attention Program

Responding to Bids for Joint Attention



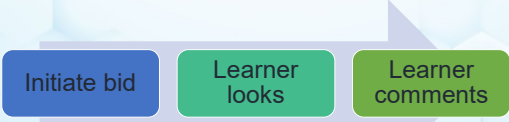
- Child responds to his name, he looks up at you when you show him something
- When you point to something across the room to show the child, the child follows your point with his eyes

Reference- teach me to talk.com

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Joint Attention Program

Responding to Bids for Joint Attention



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Joint Attention Program

Responding to Bids for Joint Attention

Procedure

- When the participant looked in the direction of the item, the instructor provided an echoic prompt of a comment
- After making the comment, the participant should look back at the instructor within 2-seconds
- When the participant looks back at the instructor, reinforce with smile and nod and comment in enthusiastic manner and tangible reinforcement (to be faded)

(Taylor & Hoch, 2008)

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Responding to Bids for JA



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Joint Attention Program Initiating Bids for Joint Attention



Words such as “Hey mom!” or “Look!”

Gestures like **pointing** or **showing** an item

Nonverbal methods of gaining attention such as **eye gaze**

Reference- teach me to talk.com

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Joint Attention Program Initiating Bids for Joint Attention


Procedure

- Take the participant within approximately 1-2 feet of a target item and waited 5 s to determine whether the participant would initiate a bid
- If the participant does not make a bid within 5 seconds, prompt the participant using physical or gestural prompts to point to the item and provide an echoic prompt to make a comment about the item

(Taylor & Hoch, 2008)

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Initiating Bid for JA



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Rozenblat, Reeve, Townsend, S. Reeve & Bar, 2019

Teaching joint attention skills to adolescents and young adults with autism using multiple exemplars and script-fading procedures by Rozenblat, Reeve, Townsend, S. Reeve & Bar
(Behavioural Interventions, June 2019)

- Tacting things that are different in the environment
- Teaching bids for joint attention including examples and non-examples of situations when to make a bid for joint attention

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**Rozenblat, Reeve, Townsend,
S. Reeve & Bar, 2019**

- Have the child tact “What’s missing?” and similar training focused on “What’s added?”, “What’s changed?” and “What’s strange?” to help with discriminating novel stimuli in the environment
- This may assist with helping the child to determine when to make bids for joint attention

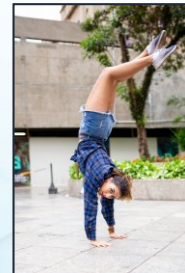
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13. To teach the learner when to make bids for attention...

- A. Teach him to talk about normal events, nothing strange
- B. Have him wear a watch that prompts him to make bids every 2 minutes
- C. Teach him to tact when things are missing, added, changed or strange
- D. Teach him how to use a clock so that he acquires the concept of when

**Rozenblat, Reeve, Townsend,
S. Reeve & Bar, 2019**

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- Purpose to teach bids for joint attention under a variety of conditions and assessed whether or not participants could discriminate between items and activities which should not occasion bids for joint attention from those that should
- 4 participants
- Teaching bids for joint attention (JA) including examples and non-examples of situations when to make a bid for JA

**Rozenblat, Reeve, Townsend,
S. Reeve & Bar, 2019**

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4 Categories

1. New person with new item & remains in a location
2. New item is present when a participant enters a location
3. Person not involved with participant delivers an item and exits location
4. Unusual activity is taking place

**Rozenblat, Reeve, Townsend,
S. Reeve & Bar, 2019**

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- Scripts were recorded on mini-me voice recorders to prompt commenting and/or asking questions as part of initiating a bid for joint attention
(<http://voice-express.com>)
- Trained 3 scripts per category

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| SAMPLE SITUATION | SAMPLE SCRIPT |
|--|--|
| Person not involved with participant delivers an item and exits location | Look at that! Who do you think that's for? |
| New person with new item & remains in a location | What's that? That's cool! |
| New item is present when a participant enters a location | What's that for? Why do you have that? |
| Unusual activity is taking place | Did you see that? What's going on there? |

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**Rozenblat, Reeve, Townsend,
S. Reeve & Bar, 2019**

Fully Initiated bids for joint attention defined as:

1. Initially looking and/ or orienting toward the target item or activity within 3 seconds of presentation
2. Looking and/or orientating toward the interaction partner within 2 seconds of initially looking and/or orienting toward the item or activity
3. Making a contextually appropriate comment about the item or activity within 2 seconds of looking at the interaction partner

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**Rozenblat, Reeve, Townsend,
S. Reeve & Bar, 2019**

Non-joint attention trials

- Assessed participant's discrimination between items or activities they should make a joint attention bid vs those they should not
- Every 6th session did block of 20 trials – 10 should not and 10 should

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**Rozenblat, Reeve, Townsend,
S. Reeve & Bar, 2019**

Intervention – 1st 3 sessions (0-second prompt delay)

1. Item presented within 2-3 m of participant
2. Present text prompt immediately to initiate bid for JA
3. Experimenter activates audio script
4. Present text prompt to orient to partner

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Rozenblat, Reeve, Townsend, S. Reeve & Bar, 2019

Prompting

- After 3rd session a 3-second delay was used
- At each step the participant was given 3 seconds to complete the step independently
- If did not complete within 3 seconds or made an error they used the text prompt or audio prompt for comment

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Rozenblat, Reeve, Townsend, S. Reeve & Bar, 2019

Results

- No bids during baseline
- All met criterion 100% for initiating after first 3 sessions
- 3 of 4 used generative language
- All participants learned to initiate bids for joint attention without the use of contrived reinforcers
- Bids for joint attention came only under control of stimuli and situations that should exert control

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Rozenblat, Reeve, Townsend, S. Reeve & Bar, 2019

Results

- 3 consistently bid within 6 sessions
- 4th by 14th session

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Rozenblat, Reeve, Townsend, S. Reeve & Bar, 2019

"Although joint attention is typically discussed as a milestone in the first few years of life, it is important that older people can discriminate the stimuli that should produce social interaction and engage in responses that promote interaction with others."

Additional Notes

- For older individuals , critical to include more complex language responses which will obtain the social partner's attention and continued social interaction
- Holth (2005) joint attention bids more likely to occur when stimuli are novel or interesting

Joint Attention and ESDM

- 2 possible reasons children with autism have deficits in joint attention

1. Less socially motivated

2. Difficulty shifting gaze from objects to people easily and frequently

Joint Attention and ESDM

3 Main gestures involved in joint attention

Step 1 – Teach child to **give** you objects

Step 2 – Teach child to **show** you objects

Step 3 – Teach child to **point** to objects to share experiences

Joint Attention and ESDM Teaching Child to Give Objects

Give objects to get help

- Put preferred items in bag, clear container, use activities he/she can't do on their own, for example, spin a top, wind up a toy
- Reach out your open hand and say "Need help, I'll help, here's ___"
- Then fade your open hand

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Joint Attention and ESDM Teaching Child to Give Objects

- Once the child is giving things routinely, work on eye contact and wait for them to occur together

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Joint Attention and ESDM Teaching Child to Give Objects

Teach the child to give (with open hand) in many situations

| | |
|-------------------------|---|
| Food | <ul style="list-style-type: none"> say, "give ____ (food e.g. Cracker), pretend to eat with sound effects and smiles and give the food back to the child |
| Does not want something | <ul style="list-style-type: none"> if you see the child doesn't want something say, "give ____" so you can remove it |
| End of meal | <ul style="list-style-type: none"> say "give spoon, plate etc." |
| Bath | <ul style="list-style-type: none"> ask the child to give you various toys and give them right back |
| Dressing | <ul style="list-style-type: none"> hand the child the sock, say "here's sock", say "give sock and put on sock, and do the same with shoes |
| Play | <ul style="list-style-type: none"> block, puzzle etc. |

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Joint Attention and ESDM Teaching Child to Give Objects

Practice the child giving frequently throughout the day!

2 or 3 times for each activity

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14. Early joint attention skills include learning to use 3 gestures

- Shoulder shrug, point, wave
- Okay sign, show, thumbs up
- Give, point, show
- Point, nod, okay sign

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15. Why would you ask a child for something and give it right back

A. I might change my mind

B. So that the word "give" is associated with good things


C. To quickly get in another trial

D. So that I can pick up the next set of materials

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Joint Attention and ESDM
Teaching Child to Show Objects

Teach your Child to Show you Things



- Fade your open hand
- When the child is showing consistently – wait for eye contact- expect him to show and look
- Be sure to name the item when you admire it

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Joint Attention and ESDM
Teaching Child to Show Objects

Adult Shows Child Objects

- During toy play, hold up an object and say "look ____" when child looks name the item and do something with it

| | |
|--------------|--|
| Meals | Look ____, show container and hand the child some food |
| Bath | Look ____, show new toy or new action, e.g. Look Lisa, see the duck, splash, splash |
| Book | Look ____, it's a ____, when the child shifts eye gaze to the picture make an interesting sound effect or action |

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Joint Attention and ESDM
Teaching Child to Show Objects

Teach your Child to Show you Things

- Hold your hand out ask the child to give
- Say show me, show me the ____ (emphasize the word show)
- When the child goes to give it to you do not take it, but admire it enthusiastically, "Wow cool bear!" – let the child keep it

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Joint Attention and ESDM Teaching Child to Show Objects

Teach your Child to Show you Things

- Fade your open hand
- When the child is showing consistently – wait for eye contact- expect him to show and look
- Be sure to name the item when you admire it

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Joint Attention and ESDM Teaching Child to Show Objects

Practice 2 to 3 times per day in 4 to 6 activities per day

Be sure to continue to show your child things as well as have him show you things

Also continue with "give me" - the child giving you things

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Joint Attention and ESDM Pointing and Sharing Experiences

Teach your child to follow a point

- As he starts to follow a point increase more and more distance, e.g. 1 foot, 2 feet etc.
- For example, "Look it's a bear!"
- Give the child the item after he looks at the item

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Joint Attention and ESDM Pointing and Sharing Experiences

Teach the child to point to request objects



- Hold up preferred item when child reaches, mold the hand into a point and then give item
- Practice many times per day
- Then move to distal pointing

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Joint Attention and ESDM Pointing and Sharing Experiences

Once the child is pointing easily to request items expect eye contact

One prompt to assist with pointing at items- put little dots or stickers on objects as pointing targets- he will touch the dot with his point- then can pull off the dots- the child will continue to point to request

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Joint Attention and ESDM Pointing and Sharing Experiences

Teach child to point to show or comment

- Point at something, when the child looks make a comment or make interesting sound effects
- Next be in front of the child have the child point (can prompt him) to point to picture- then wait for eye contact
- Generalize this point and name in many contexts

(Rogers, Dawson, & Vismara, 2012)

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info@alphabee.com
www.alphabee.com
416. 367. 5968



@alphabee2005

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