



# Typical Infant Development: Social Communication

## When Should We Be Concerned ???





# **Disclosures**

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**People's need for  
social connection  
with others ...  
... is as basic  
as the need  
for food and drink.**

**Even babies are**  
  
**innately**

**social creatures.**

**So...**

**what can “normal” infants  
teach us  
about  
typical development ???**

**All babies use  
eye contact  
to inspect...**

**... but they should also  
use eye contact  
to engage socially.**

**Inspection [with Connection]**

***versus***

**Active social engagement.**

***What's  
the difference ?***

# **Inspection [with Connection]**

## **Active Social Engagement**

Courtesy of GE HealthCare

**This is what  
social engagement  
  
should look like  
in 6-15 month old infants:**

**So... what about babies  
from birth to 6 months?**



**... just how early  
should we see  
intense social connection?**

**RIVETING eye contact  
and social connection  
with or without a social smile  
should be present  
from birth,**

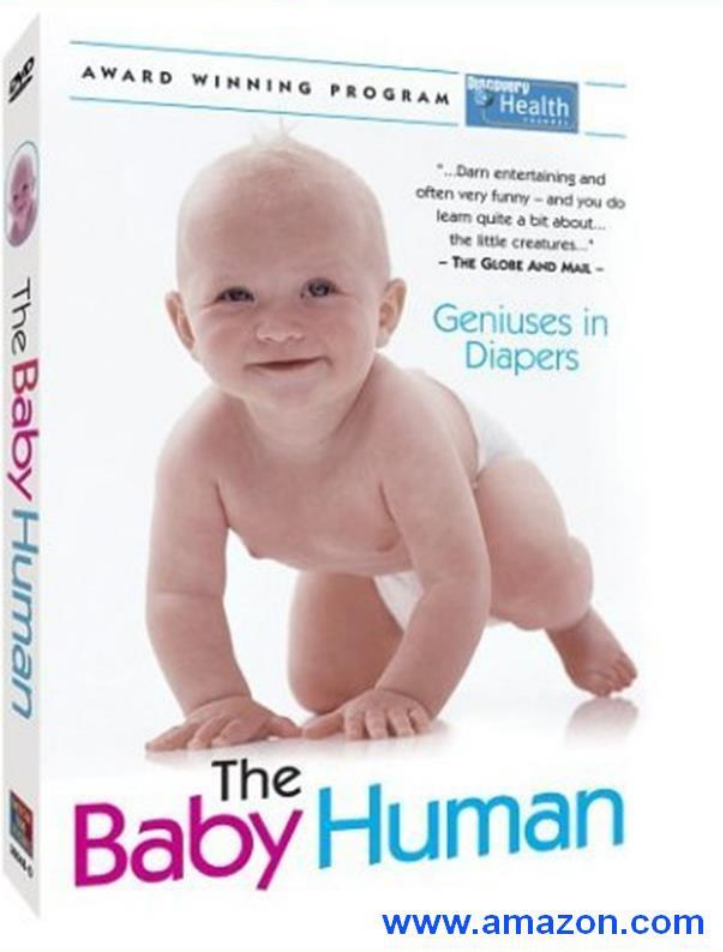
**Intense  
Inspection with Connection,**

***maybe even in the  
delivery room !***





# Typical Development



To Relate  
To Belong  
To Move

To Talk  
To Think  
To Walk





# Newborn Cooing Conversations



**How early can infants  
engage in “conversation”?**

**10-12 weeks of age**

Courtesy of Discovery Health



# Newborn Cooing Conversations



# Newborn/ Young Infant Imitation





# Early Infant Social Interactions



# Early Infant Still Face

**How early do infants understand  
changes in facial expression?**

**~5 months of age**

Courtesy of Discovery Health



# Happy-Sad Face



**How early do infants understand  
changes in facial expression?**

**~5 months of age**

Courtesy of Discovery Health



# Infant Response To Their Name





# Infant Eye Gaze



**How early do infants recognize  
the importance of eye contact?**

**~7 months of age**

Courtesy of Discovery Health



# Infant Babbling

**How early do infants babble  
and imitate speech?**

**~8-9 months of age**

Courtesy of Discovery Health



# Infant Babbling



# Infant Gestures and Pointing



**How early do infants use gestures  
to communicate?**

**~9-11 months of age**

Courtesy of Discovery Health





# Infant Gestures and Pointing



# Infant Following Gaze

**How early do infants  
follow another's gaze?  
~10 months of age**

Courtesy of Discovery Health



# Theory of Mind



**~12 months of age**



# Toddler Joint Visual Attention



**How important is the combination  
of gaze & pointing for learning?**

**13 months of age**

Courtesy of Discovery Health





# Toddler Pragmatics



How early do infants understand  
the nonverbal pragmatics of language?  
**<13-14 months of age**

Courtesy of Discovery Health



# Early “Normal” Echoing





# False Beliefs

**~18 months of age**



# Toddler Imitation

**How important is imitation  
for learning in infancy?**

**18 months of age**

Courtesy of Discovery Health



# Pretend Play -- TV







# Toddler-Preschool Conversation





# Concerning Infant Behaviors

**So, what gets me worried  
as a clinician ???**

**... raises the hair  
on the back of my neck ???**

**... gives me that sinking feeling  
in the pit of my stomach ???**

**Imagine you are talking  
to this baby  
in “motherese” ...**

**And get this feedback  
in return ...**

**Inspection [WITHOUT  
Connection],**

**Or passive (blank) inspection**

**Many of our parents  
of children with autism  
report that  
their baby**

***never really looked at them,  
or just gave them brief glances.***



**This mother who was worried  
her child was exhibiting early  
signs even asked...**

***“Should I have to compete  
with the leaves on the trees  
to get my baby’s attention?”***





# Infant at Sister's Evaluation

**3 months of age**



# Infant Screening Project

## Typical Infant

**2 months of age**



# Infant Screening Project

## Atypical Infant

**2 months of age**



# Infant Screening Project

## Atypical Infant

**7½ weeks of age**



# UCI Infant Sibling Project Atypical Infant



**7 months of age**





# UCI Infant Sibling Project

## Atypical Infant

**9½ months of age**



# UCI Infant Sibling Project

## Atypical Infant

**21 months of age**



**Jaden**



# **ABSOLUTE INDICATIONS** **for Immediate Evaluation**

- No consonant babbling **by 12 months**
- No pointing, waving or other communicative gesture **by 12 months** (other than raising arms to be picked up)
- No single spontaneous (non-echoed) words other than 'mama' or 'dada' **by 16 months**
- No spontaneous (non-echoed) 2-word phrases **by 24 months**
- The loss of **ANY** previously acquired skill at **ANY** time (*e.g.*, words, gestures, responding to name, *etc.*)





# **CAVEATS TO:** **ABSOLUTE INDICATIONS** **for Immediate Evaluation**

- 'Mama' or 'dada' need to be parent's name not just babbling sounds uttered, *e.g.*, when crying.
- Single words/ phrases need to be directed at someone.
- Gibberish should also be directed and should contain intelligible word(s).
- Pointing must be with isolated index finger NOT whole hand.
- Pointing must be done to show or request, not just at pictures in a book.
- Hand-over-Hand maneuvers are never part of typical language development, and are probably pathognomonic for ASD





# **MY ADDITIONS TO:** **ABSOLUTE INDICATIONS** **FOR IMMEDIATE EVALUATION**

- **No cooing/ babbling ‘conversations’ by 6 months**
- **No response to name by 9 months.**
- **No response to “Where’s mama/ dada?” by 9 months, followed by other family members’ names.**
- **Most single words/ phrases are not directed at someone.**
- **Gibberish is not directed or doesn’t contain intelligible word(s).**
- **Almost all spoken words are used to label objects instead of communicating.**
- **Immediate echolalia past ~18 months is virtually pathognomic for ASD**



# MY ADDITIONS TO: **ABSOLUTE INDICATIONS** FOR IMMEDIATE EVALUATION

- 'Play' consists of taking items one-at-a-time and either labeling each or holding up to be labeled by adult.
- Pointing may occur at pictures in a book or at random objects but not to show or request from a person.
- 'Mama/Dada' said but not as parent's name.
- Presence of Hand-over-Hand maneuvers ever (probably pathognomonic for ASD).
- Never requests help- may give to fix but not ask for help.
- Is a quiet (mostly non-vocal), undemanding, 'good baby'





# **RED** Flags for ASD

Wetherby, A., Woods, J., Allen, L., Cleary, J., Dickinson, H., & Lord, C., 2004 Flags for ASD

## **1. Family history of ASD**

## **2. Impairment in Social Interaction**

- a. No big smiles or other warm, joyful engagement by 6 mos or thereafter**
- b. No two-way, back-&-forth sharing of sounds, smiles or facial expressions by 9 mos.**
- c. Does not follow adult's gaze or point**
- d. Limited use of peek-a-boo and other back and forth interactions**

## **3. Impairment in Communication**

- a. Limited use of communicative gestures or words for showing, waving pointing and sharing attention by 12 months (note that gestures (words) used to request and protest may be present)**
- b. Does not respond to name**
- c. ANY loss of speech, babbling, language or social skills**



# BDI-2 & RED Flags for ASD

Pamela R Rollins PhD CCC-SLP

- 1. Family history of ASD**
- 2. Impairment in Social Interaction**
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- 3. Impairment in Communication**
  - a. Limited use of communicative gestures or words for showing, waving pointing and sharing attention by 12 months (*note that gestures (words) used to request and protest may be present*)**
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# BDI-2 & RED Flags for ASD

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## Impairment in Social Interaction

**2.a. No two-way, back-&-forth sharing of sounds, smiles or facial expressions by 9 mos.**

**Communication, EC13 ...*child communicates in a back-and-forth, turn-taking style ...***

**(Are the child's actions and sounds directed at other people in an attempt to communicate? Which actions and sounds are in response to others?) **Observation or Interview****

**Communication, EC18 ... *child engages in extended and meaningful nonverbal exchanges with others***

**(The child engages in extended and meaningful nonverbal exchanges with others using sounds, gestures, or postures 2-frequently (3 or more times in 24 hours), 1-sometimes (1 or 2 times in 24 hours), 0-rarely or never) **Observation or Interview****





# BDI-2 & RED Flags for ASD

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## 2.d. Limited use of peek-a-boo and other back and forth interactions

**Personal-Social, AI 9** *The child plays peekaboo.* (Child's response to peekaboo game is 2-participates actively and looks for examiner's face when it is out of view, 1-Ocassionally looks for examiner's face but is passive for most of game, 0-Rarely or never interacts with the examiner or plays game) **Structured**

## Impairment in Communication

### 2.1 Limited use of communicative gestures or words for showing, waving, pointing and sharing attention by 12 months

**Communication, EC11** *The child*





# BDI-2 & RED Flags for ASD

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## Impairment in Social Interaction

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**1.4 Limited use of peek-a-boo and other**



# CSBS Infant-Toddler Checklist

## 6-16 months of age



### CSBS DP Infant-Toddler Checklist

Child's name: \_\_\_\_\_ Date of birth: \_\_\_\_\_ Date filled out: \_\_\_\_\_

Was birth premature? \_\_\_\_\_ If yes, how many weeks premature? \_\_\_\_\_

Filled out by: \_\_\_\_\_ Relationship to child: \_\_\_\_\_

**Instructions for caregivers:** This Checklist is designed to identify different aspects of development in infants and toddlers. Many behaviors that develop before children talk may indicate whether or not a child will have difficulty learning to talk. This Checklist should be completed by a caregiver when the child is between **6 and 24 months of age** to determine whether a referral for an evaluation is needed. The caregiver may be either a parent or another person who nurtures the child daily. Please check all the choices that best describe your child's behavior. If you are not sure, please choose the closest response based on your experience. **Children at your child's age are not necessarily expected to use all the behaviors listed.**

#### Emotion and Eye Gaze

1. Do you know when your child is happy and when your child is upset? ☐ Not Yet ☐ Sometimes ☐ Often
2. When your child plays with toys, does he/she look at you to see if you are watching? ☐ Not Yet ☐ Sometimes ☐ Often
3. Does your child smile or laugh while looking at you? ☐ Not Yet ☐ Sometimes ☐ Often
4. When you look at and point to a toy across the room, does your child look at it? ☐ Not Yet ☐ Sometimes ☐ Often

#### Communication

5. Does your child let you know that he/she needs help or wants an object out of reach? ☐ Not Yet ☐ Sometimes ☐ Often
6. When you are not paying attention to your child, does he/she try to get your attention? ☐ Not Yet ☐ Sometimes ☐ Often
7. Does your child do things just to get you to laugh? ☐ Not Yet ☐ Sometimes ☐ Often
8. Does your child try to get you to notice interesting objects—just to get you to look at the objects, not to get you to do anything with them? ☐ Not Yet ☐ Sometimes ☐ Often

#### Gestures

9. Does your child pick up objects and give them to you? ☐ Not Yet ☐ Sometimes ☐ Often
10. Does your child show objects to you without giving you the object? ☐ Not Yet ☐ Sometimes ☐ Often
11. Does your child wave to greet people? ☐ Not Yet ☐ Sometimes ☐ Often
12. Does your child point to objects? ☐ Not Yet ☐ Sometimes ☐ Often
13. Does your child nod his/her head to indicate yes? ☐ Not Yet ☐ Sometimes ☐ Often

#### Sounds

14. Does your child use sounds or words to get attention or help? ☐ Not Yet ☐ Sometimes ☐ Often
15. Does your child string sounds together, such as *uh oh, mama, gaga, bye bye, bada*? ☐ Not Yet ☐ Sometimes ☐ Often
16. About how many of the following consonant sounds does your child use:  
*ma, na, ba, da, ga, wa, la, ya, sa, sha*? ☐ None ☐ 1-2 ☐ 3-4 ☐ 5-8 ☐ over 8

#### Words

17. About how many different words does your child use meaningfully that you recognize (such as *baba* for bottle; *gaggie* for doggie)? ☐ None ☐ 1-3 ☐ 4-10 ☐ 11-30 ☐ over 30
18. Does your child put two words together (for example, *more cookie, bye bye Daddy*)? ☐ Not Yet ☐ Sometimes ☐ Often

#### Understanding

19. When you call your child's name, does he/she respond by looking or turning toward you? ☐ Not Yet ☐ Sometimes ☐ Often
20. About how many different words or phrases does your child understand without gestures? For example, if you say "where's your tummy," "where's Daddy," "give me the ball," or "come here," without showing or pointing, your child will respond appropriately. ☐ None ☐ 1-3 ☐ 4-10 ☐ 11-30 ☐ over 30

#### Object Use

21. Does your child show interest in playing with a variety of objects? ☐ Not Yet ☐ Sometimes ☐ Often
22. About how many of the following objects does your child use appropriately:  
cup, bottle, bowl, spoon, comb or brush, toothbrush, washcloth, ball, toy vehicle, toy telephone? ☐ None ☐ 1-2 ☐ 3-4 ☐ 5-8 ☐ over 8
23. About how many blocks (or rings) does your child stack? **Stacks** ☐ None ☐ 2 blocks ☐ 3-4 blocks ☐ 5 or more
24. Does your child pretend to play with toys (for example, feed a stuffed animal, put a doll to sleep, put an animal figure in a vehicle)? ☐ Not Yet ☐ Sometimes ☐ Often

Do you have any concerns about your child's development? ☐ yes ☐ no If yes, please describe on back.





# **CSBS Infant-Toddler Checklist 6-16 months of age**

**<http://www.autismalert.org/uploads/PDF/SCREENING--DEVELOPMENTAL%20DELAY%20&%20AUTISM--CCBS%20DP%20Infant-Toddler%20Checklist.pdf>**

**Includes form and scoring instructions**



# DSM-5 Worksheet

<https://depts.washington.edu/dbpeds/Screening%20Tools/DSM-5%28ASD.Guidelines%29Feb2013.pdf>

**An outline of DSM-5 and behaviors that qualify for the individual criteria**





# M-CHAT-R/F

**AAP recommended age range:**

**16-48 months**

**MUST do FUI**

**for any failed items  
to be a valid screen**



# What Early Identification can Achieve



# So What's the Point?