Supporting Children with Disabilities

Contact Information

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Outline

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- **Signs / Symptoms**
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  - Down Syndrome
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- **Interventions**
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- **Questions / Comments**

General Child Development: 0-3 Years

3 months

- Lifts head and chest while lying on stomach
- Arms, fingers, and legs move freely; kicks legs vigorously
- Uses eyes to follow a moving object or person
- Grasps a rattle or finger
- Returns a smile
- Makes cooing noises and vowel sounds
- Watches caregiver's face when speaking, makes noises in response to caregiver
- Cries in different ways to communicate needs

6 months

- Holds up head and looks at surroundings
- Recognizes familiar faces and objects (e.g., teddy bear)
- Makes regular eye contact with caregiver
- Interprets and responds to caregiver’s facial expressions
- Smiles frequently
- Coos, giggles, and makes a variety of sounds
- Pushes up on hands and knees
- Rolls from back to stomach and from stomach to back
- Holds objects
- Enjoys being held and cuddled
- Searches for sounds, turns head toward sounds

9 months

- Sits up without much help
- Begins to pull up self and stand (with help)
- Crawls or scoots forward
- Uses thumb and forefinger to pick up small objects
- Recognizes and looks for familiar people
- Initiates and makes sounds approximating real words (e.g., “Mama”, “Dada”)
- Dumps toys or objects from containers

12 months

- Stands without assistance while holding onto furniture
- Moves around room while holding onto furniture
- Takes beginning steps toward walking alone
- Says a few words with meaning
- Points to a few objects when asked
- Dances or bounces to music
- Responds to name
- Wants caregivers to always be in view
- Shows fear/anxiety of strangers

18 months

- Walks without help
- Climbs up and down on things
- Stands up and sits down without holding onto anything
- Likes to push, pull, and take apart things
- Engages in temper tantrums when told “No”
- Understands simple one-step instructions
- Uses meaningful single words, uses words and gestures together
- “Clings” to caregivers in new situations

2 years

- Walks, runs, and climbs without help
- Goes up and down stairs without holding onto anything
- Uses the word “No”
- Displays (frequent) temper tantrums when angry, tired, or upset
- Puts two and three words together in simple sentences
- Frequently uses about 50 or more words
- Sings songs, recites rhymes
- Feeds self and drinks from a cup without a lid
- Resists sharing toys with others

3 years

- Jumps up and down
- Begins to pedal a riding toy
- Throws a big ball and begins to catch it
- Plays with others and shares toys (sometimes)
- Talks in short sentences
- Attempts to express feelings
- Asks “what” and “why” questions

PRACTICE

7 months

http://www.youtube.com/watch?v=WFsh3G4C-Iw

14 months

http://www.youtube.com/watch?v=c75dT58MopI

Speech / Language Development: 0-3 Years

0-3 months

- Talking
  - Makes sounds of pleasure (e.g., cooing)
  - Cries differently depending on need
  - Smiles in response to seeing caregiver
- Hearing / Understanding
  - Startles in response to loud sounds
  - Quiets or smiles when caregiver speaks to him/her
  - Increases or decreases sucking in response to sound

4-6 months

- Talking
  - Babbling sounds become more speech-like with many different sounds, including *p*, *b*, and *m*
  - Chuckles and laughs
  - Vocalizes excitement (e.g., blows raspberries) and displeasure
  - Makes gurgling sounds when left alone and when playing with caregiver
- Hearing / Understanding
  - Moves eyes in direction of sound
  - Responds to changes in caregiver's voice tone
  - Notices toys making sounds
  - Pays attention to music

7-12 months

- Talking
  - Babbling includes words, as well as both long and short groups of sounds
  - Uses speech or other sounds to obtain and maintain attention from caregiver
  - Uses gestures to communicate (e.g., waving, holding out arms to be picked up)
  - Imitates different speech sounds
  - Makes up words for particular animals (e.g., uses “dodo” to refer to all animals)
  - Uses one or two words (e.g., “hi”, “dog”, “Dada”, Mama”) by 12 months although sounds may not be clear
  - Expresses “yes” or “no” by nodding or shaking his/her head

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- Hearing / Understanding
  - Enjoys games, such as “Peek-A-Boo” and “Pat-A-Cake”
  - Turns and looks in direction of sounds
  - Listens when caregiver speaks to him/her
  - Recognizes words for common items, such as “cup”, “shoe”, “book”, or “juice”
  - Begins to respond to requests, such as “Come here” or “Want more?”

Caregiver Responses: 0-12 Months

- Check your baby's ability to hear and attend to ear problems and infections, especially when they are recurrent.
- Reinforce your baby's attempts to communicate by looking at him/her, speaking to him/her, and imitating vocalizations. Quickly respond to your baby's communication attempts by meeting their needs (e.g., comfort a crying baby).
- Provide meaning to a baby's attempts to communicate (e.g., "You're crying; I know it is time for your bottle", or "You're smiling; you must like it when I tickle your feet").
- Repeat his/her laughter and facial expressions. Use a sing-song, high-pitched tone of voice, exaggerated facial expressions, and wide-open eyes when interacting with your baby. (These communication behaviors capture a baby's attention and keeps him/her focused on interacting.)

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- Pay attention to your baby's style of expressing emotions, preferred level of activity, and preference for social interaction. Some babies are quiet, observant, and prefer limited adult interaction. Other babies are emotional, active, and prefer constant adult attention and interaction. (Recognizing the unique personality of each baby will facilitate effective communication.)
- If your baby is interested in another object, facilitate interactions with that object; for example, see if he/she wants to hold or touch it.
- Teach your baby to imitate actions, such as "Peek A Boo", clapping, blowing kisses, "Pat-A-Cake", "Itsy-Bitsy Spider", and waving bye-bye. (These games teach turn-taking, which is needed for conversation.)
- Talk to your baby while you are doing things, such as dressing, bathing, and feeding (e.g., "Mommy is washing Sam's hair", "Sam is eating carrots"). Point out interesting observations.

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- Talk about where you are going, what you will do once you get there, and who and what you'll see (e.g., "Sam is going to Grandma's house, Grandma has a dog, and Sam will pet the dog").
- Make the most of the times when you and your baby are facing each other (e.g., during diaper changes, feedings) and talk, sing, or gently tickle your baby.
- Talk about colors (e.g., "Sam's hat is red").
- Practice counting fingers and toes.
- Count steps while going up and down them.
- Teach animal sounds (e.g., "A cow says 'moo'").

12-24 months

- Talking
  - Increases vocabulary every month
  - Uses some one- or two-word sentences (e.g., “Where’s doggy”, “Go bye-bye”, “What’s that?”)
  - Uses between 50 and 200 words
  - Puts two or three words together (e.g., “more cookie”, “no juice”, or “Mommy book”)
  - Combines sounds and actions, such as pointing to a cup and saying, “wawa” for water
  - Repeats sounds and actions to make someone laugh
  - Uses many different consonant sounds at the beginning of words

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- Hearing / Understanding
  - Points to a few body parts when asked
  - Follows simple commands and understands simple questions (e.g., “Roll the ball”, “Kiss the baby”, Where’s your shoe?”)
  - Listens to simple stories, songs, and rhymes
  - Points to pictures in a book when named

Caregiver Responses: 12-24 Months

- Talk while doing things and going places. When taking a walk, for example, point to familiar objects (e.g., cars, trees, and birds) and say their names: "I see a dog. The dog says 'woof.' This is a big dog. This dog is brown."
- Use simple, but grammatically correct speech easy for your child to imitate.
- Take a “sound walk” around the house or in your child’s room. These sounds will be familiar when your child is introduced to phonics in preschool and kindergarten.
- Make bath time "sound playtime". You are eye-level with your child. For example, blow bubbles and make the sound "b-b-b-b." Engines on toys can make a "rrr-rrr-rrr" sound.
- Expand on words. For example, if your child says "car," you respond by saying, "You're right! That is a big red car."

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- Continue to find time to read to your child every day. Try to find books with large pictures and one or two words or a simple phrase or sentence on each page. When reading to your child, take time to name and describe the pictures on each page.
- Have your child point to pictures you name.
- Ask your child to name pictures. He/she may not respond to your naming requests at first. Just name the pictures for him/her. One day, he/she will surprise you by stating the picture's name.
- Respond quickly and predictably to children‘s communicative efforts (e.g., "You are pointing at the fridge, is it time for some juice?" "Bah-bah, that means you want your blanket, doesn't it?").
- Expand on children’s one- and two-word communications and build sentences around their words (e.g., "Hot, that's right, the pizza is hot”, "Blue, your pants are blue with white stripes, aren't they?”, "Do again? Okay, I'll push you some more on the swing").

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- Keep a word diary to record your child’s new words. The diary can be shared with other caregivers, and the words can be used in conversation.
- Give children one instruction at a time and provide warnings before transitions (e.g., "We're going to leave for Grandma's house in five minutes." Five minutes pass. "Okay, time to get ready, go get your coat from the bedroom. Oh good, you got your coat, I'll help you put it on").
- Label your child’s emotions (e.g., "When you fall and get hurt, you feel sad”, or "Playing with your cousin Mary makes you happy!").
- Make the most of daily routines and talk to your child through routines in the sequence in which they happen (e.g., "First we put warm water in the bathtub and then you take off your clothes and get in. Time to get the washrag soapy and get clean. First I'll wash your toes.").
- During play, follow your child’s lead and let him/her create the play. Describe for him/her what they are doing during play and let them have control (e.g., "Oh, you are driving the car up the sofa, now it is falling to the floor. Here comes the truck to take the car to the garage").
- Provide an explanation and tell your child why you want something to happen (e.g., "Janey, I told you to please pick up your blocks and put them away. I don't want anyone tripping and falling over them").

2-3 years

- Talking
  - Has a word for almost everything
  - Uses two or three words to ask for things
  - Uses k, g, f, t, d, and n sounds
  - Speech is understood by familiar listeners most of the time
  - Often asks for, or directs, attention to objects by naming them
- Hearing / Understanding
  - Understands differences in meaning (e.g., “go-stop”, “in-out”, “big-little”, “up-down”)
  - Follows two requests (e.g., “Get your toys and put them in the toy box”)
  - Listens to and enjoys sharing stories for longer periods of time

Caregiver Responses: 2-3 Years

- Use clear, simple speech easy to imitate.
- Show your child you are interested in what he/she says to you by repeating what he/she said and expanding on it. For example, if your child says, "pretty flower," you could respond by saying, "Yes, that is a pretty flower. The flower is bright red. It smells good, too. Does Sam want to smell the flower?"
- Let your child know what he/she has to say is important by asking him/her to repeat words you do not completely understand. For example, "I know you want a block. Tell me again which block you want."
- Expand on your child's vocabulary. Introduce new vocabulary through reading books containing a simple sentence on each page.
- Name objects and describe the picture on each page of the book. State synonyms for familiar words (e.g., mommy, woman, lady, grown-up, adult) and use this new vocabulary in sentences to help your child learn it in context.

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- Put objects into a bucket and have your child remove one object at a time, saying its name. Repeat what your child says and expand upon it: "That is a comb. Sam combs his hair." Take the objects from the bucket and help your child group them into categories (e.g., clothes, food, drawing tools).
- Cut out pictures from old magazines and make a scrapbook of familiar things. Help your child glue the pictures into the scrapbook. Practice naming the pictures, using gestures and speech to show how you use the items.
- Write simple appropriate phrases under the pictures. For example, "I can swim," or "Happy birthday to Daddy." Your child will begin to understand reading is spoken language in print.
- Ask your child questions requiring a choice, rather than a "yes" or "no" answer. For example, rather than asking, "Do you want milk? Do you want water?", ask, "Would you like a glass of milk or water?" Be sure to wait for the answer, and reinforce successful communication; for example, "Thank you for telling Mommy what you want. Mommy will get you a glass of milk."

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- Look at family photos and name the people. Use simple phrases/sentences to describe what is happening in the pictures (e.g., "Sam swims in the pool").
- Continue to sing songs, play finger games ("Where is Thumbkin?"), and tell nursery rhymes ("Hickory Dickory Dock"). These songs and games introduce your child to the rhythm and sounds of language.
- Strengthen your child's language comprehension skills by playing the “Yes-No” game; for example, "Are you a boy?“, "Is that a zebra?“, or "Is your name Joey?"
- Respond quickly and predictably to your child’s communicative efforts (e.g., "You are pointing at the fridge, is it time for some juice?" or "Bah-bah, that means you want your blanket, doesn't it?").
- Expand on your child’s one- and two-word communications and build sentences around their words (e.g., "Hot, that's right, the pizza is hot”, "Blue, your pants are blue with white stripes, aren't they?”, or "Do again? Okay, I'll push you some more on the swing").

PRACTICE

12 months

http://www.youtube.com/watch?v=PmHVmriicRg

24 months

http://www.youtube.com/watch?v=eZQtQxbgIls

Speech / Language Disorders

- Speech disorders: When a child is unable to produce speech sounds correctly or fluently, or has problems with his/her voice.
- Language disorders: When a child has trouble understanding others (**receptive language**) or sharing thoughts, ideas, and feelings (**expressive language**).

Red Flags

- If a child cannot be understood by caregivers (or familiar adults) by their 3rd birthday.
- If a child cannot comprehend others' speech, as well as peers' speech.
- If a child speaks less than 50 words between ages 18 and 24 months.
- If a child stutters, has a hoarse voice without illness, and demonstrates a disinterest in communicating.
- Remember:
  - *Always* rule out hearing difficulties (e.g., chronic ear infections, deafness, "glue ear") that impact typical speech/language development.
  - Parents often wait to have their child assessed for various reasons, such as they think the child is too young or they are reassured by friends, family members, and physicians.

Speech Disorders

Childhood Apraxia of Speech: A motor speech disorder in which saying sounds, syllables, and words is difficult.

- Signs/symptoms include:
  - Does not coo or babble as an infant
  - First words are late, missing sounds
  - Few different consonant and vowel sounds
  - Problems combining sounds, long pauses between sounds
  - Simplifies words by replacing difficult sounds with easier ones or by deleting difficult sounds alltogether
  - Possible problems eating

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Dysarthria: A motor speech disorder in which the muscles of the mouth, face, and respiratory system are weakened, move slowly, or are immobile.

- Signs/symptoms include:
  - "Slurred" speech
  - Speaking softly or barely able to whisper
  - Slow rate of speech
  - Rapid rate of speech with a "mumbling" quality
  - Limited tongue, lip, and jaw movement
  - Abnormal intonation (rhythm) when speaking
  - Changes in vocal quality, such as "nasal" or “stuffy” speech
  - Hoarseness
  - Breathiness
  - Drooling or poor saliva control
  - Chewing and swallowing difficulty

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Orofacial Myofunctional Disorder (OMDs): A motor speech disorder in which the tongue moves forward in an exaggerated way during speech and/or swallowing.

- Although a "tongue thrust" swallow is normal in infancy, it usually decreases and disappears as a child grows. If it continues, a child may look, speak, and swallow differently than peers.
- Some children produce sounds incorrectly as a result of OMD.
  - OMD most often causes sounds like /s/,/z/, "sh", "zh", "ch", and "j" to sound differently. For example, the child may say "thumb" instead of "some" if they produce an /s/ like a "th".
  - The sounds /t/, /d/, /n/, and /l/ may be produced incorrectly because of weak tongue tip muscles.

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Articulation Disorder: A speech sound disorder characterized by sounds being substituted, left off, added, or changed.

- Young children often make speech errors. For instance, many young children sound like they are making a "w" sound for an "r" sound (e.g., "wabbit" for "rabbit") or may leave sounds out of words, such as "nana" for "banana."
- A child may have an articulation disorder if these errors continue past the expected age.

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Phonological Disorder: A speech sound disorder involving patterns of sound errors.

- For example, substituting all sounds made in the back of the mouth like "k" and "g" for those in the front of the mouth like "t" and "d" (e.g., saying "tup" for "cup" or "das" for "gas").
- Some words start with two consonants, such as broken or spoon. When children do not follow this rule and say only one of the sounds ("boken" for broken or "poon" for spoon), it is more difficult for the listener to understand the child.
- It is common for children learning speech to leave out a sound from a word; however, it is not expected as a child gets older.

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Stuttering: A speech disorder characterized by disruptions (or disfluencies) in the production of speech sounds.

- Signs/symptoms include:
  - Repeated words or parts of words
    - For example, "*W- W- W-* Where are you going?"
  - Words preceded by "um" or "uh“
    - For example, "I'll meet you - *um um you know like* - around six o'clock."
  - Prolongations of speech sounds
    - For example, "*SSS*ave me a seat."
  - Pausing during a sentence or pronunciation of words, often with the lips together
  - Tension in voice
  - Frustration and/or embarrassment during attempts to communicate
  - Head jerking, blinking eyes while talking
- Risk factors for ongoing stuttering include a family history of stuttering, stuttering for 6 months or longer, the presence of other speech/language disorders, and/or concerns about stuttering on the part of the child or the family.

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Voice Disorders: A speech disorder caused by problems when air passes from the lungs, through the vocal cords, and then through the throat, nose, mouth, and lips.

- Signs/symptoms include:
  - Weak cry (in infants and toddlers)
  - Voice may be too loud or too soft
  - Hoarseness/raspiness or frequent laryngitis
  - Child complains of a “scratchy” throat or seeks out water to soothe the throat
  - Breathy, airy speech, may run out of air during a sentence
  - Trouble being heard or understood, especially in school or group settings
  - Pitch of voice may suddenly change
- Causes of voice disorders are typically due to medical conditions or from overusing the vocal cords from screaming, constantly clearing the throat, talking loudly, making sound effects during play, or singing.

Language Disorders

Expressive Language Disorder

- Difficulty conveying meaning or message to others
- Difficulty putting words together to form sentences, or sentences may be simple and short with improper word order
- Difficulty finding the right words when talking, often uses placeholder words such as "um"
- Possesses a vocabulary below the level of peers
- Leaves words out of sentences when talking
- Uses certain phrases repetitively, and repeats (echo) parts or all of questions
- Uses tenses (past, present, future) improperly

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Receptive Language Disorder

- Difficulty understanding the message from others
- Problems following spoken instructions
- Difficulty understanding basic concepts, questions, and instructions
- Problems learning new words
- Problems saying words in the right order
- Difficulty having conversations and telling stories

Mixed Receptive Expressive Disorder

- Characteristics of both Expressive Language Disorder and Receptive Language Disorder

Red Flags of Expressive Language Disorder

- At 15 months, is not using three words
- At 18 months, is not saying, "Mama," "Dada," or other names
- At 24 months, is not using at least 25 words
- At 30 months, is not using 2-word phrases, including phrases with both a noun and a verb
- At 36 months, does not have at least a 200-word vocabulary, is not asking for items by name, exactly repeats questions asked by others, regression in language, or is not using complete sentences
- At 48 months, often uses words incorrectly or uses a similar or related word instead of the correct word

Red flags of Receptive Language Disorder:

- At 15 months, does not look or point at 5 to 10 people or objects when they are named by a caregiver
- At 18 months, does not follow simple directions, such as “Get your coat"
- At 24 months, is not able to point to a picture or a part of the body when named
- At 30 months, does not respond out loud or by nodding or shaking the head and asking questions
- At 36 months, does not follow 2-step instructions, and does not understand action words

PRACTICE

Childhood Apraxia of Speech – 3 years

http://www.youtube.com/watch?v=szjfC9K190U

Articulation Disorder – 3 years

http://www.youtube.com/watch?v=PYxM229pAzw

Stuttering – 30 months

http://www.youtube.com/watch?v=DH0bvCbh22g

Down Syndrome

- The cause of Down Syndrome is one of three types of abnormal cell division involving the 21st chromosome pair.
- Down Syndrome is usually identified at birth or shortly thereafter.
- Initially, the diagnosis is based on physical characteristics commonly seen in babies with Down Syndrome.
- The diagnosis must be confirmed by a chromosome study (karyotype).
- Most people with Down Syndrome have IQs within the Mild to Moderate range of Intellectual Disability.
- People with Down Syndrome exhibit delays in cognitive development, language development, social skills, and fine and gross motor development.

Language Development

	Typical Children		Down Syndrome	
Activity	**Average Age**	**Range**	**Average Age**	**Range**
Responds to sounds	0 months	0-1 month	1 month	2 to 6 weeks
Babbles “Dada” and “Mama”	4 months	2-6 months	7 months	4-8 months
Responds to simple instructions	10 months	6-14 months	16 months	12-24 months
First words spoken with meaning	14 months	10-23 months	18 months	13-36 months
2-word phrases	20 months	15-30 months	30 months	18-60 months+

Social Development

	Typical Children		Down Syndrome	
Activity	**Average Age**	**Range**	**Average Age**	**Range**
Smiles when caregiver speaks to him/her	1 month	1-2 months	2 months	6 weeks-4 months
Plays “Pat-A-Cake” or “Peek-A-Boo”	8 months	5-13 months	11 months	9-6 months
Drinks from a regular cup	12 months	9-17 months	20 months	12-30 months
Continent (urine) during the daytime	24 months	14-36 months	36 months	18-50 months+
Bowel control	24 months	16-48 months	36 months	20-60 months+

Fine Motor Development

	Typical Children		Down Syndrome	
Activity	**Average Age**	**Range**	**Average Age**	**Range**
Follows objects with eyes	6 weeks	1-3 months	3 months	6 weeks-6 months
Reaches for objects to grasp	4 months	2-6 months	6 months	4-11 months
Passes objects from hand-to-hand	5.5 months	4-8 months	8 months	6-12 months
Builds a tower of 2 cubes	15 months	10-19 months	30 months	14-32 months
Copies a circle	30 months	24-40 months	48 months	36-60 months+

Gross Motor Development

	Typical Children		Down Syndrome	
Activity	**Average Age**	**Range**	**Average Age**	**Range**
Holds head steady while sitting	3 months	1-4 months	5 months	3-5 months
Rolls over	5 months	2-10 months	8 months	4-12 months
Sits alone	7 months	5-9 months	9 months	6-16 months
Stands alone	11 months	9-16 months	18 months	12-38 months
Walks alone	12 months	9-17 months	23 months	13-48 months

Physical Characteristics

- Flattened face with an upward slant to the eyes, short neck, and atypically shaped ears
- Deep crease in palm of the hand
- White spots on the iris of the eye
- Poor muscle tone, loose ligaments
- Small hands and feet

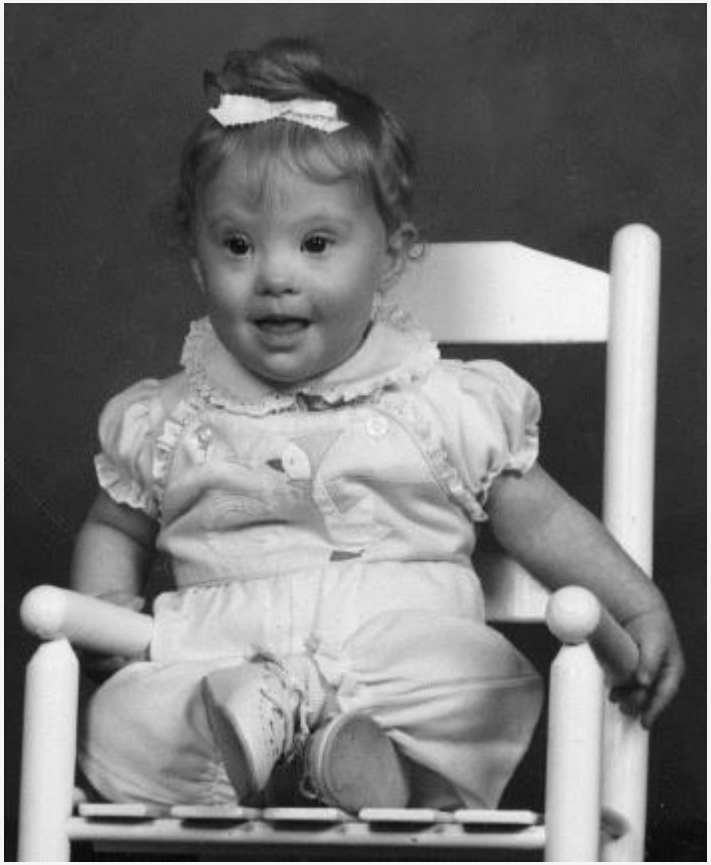
Associated Health Conditions

- Feeding difficulties, such as sucking and swallowing, as well as difficulty with foods with lumpy textures
- Sleep difficulties
- Congenital heart disease
- Hearing problems
- Intestinal problems, such as blocked small bowel or esophagus
- Celiac disease
- Eye problems, such as cataracts
- Thyroid dysfunctions
- Skeletal problems
- Infectious diseases
- Leukemia
- Dementia

PRACTICE

12 months

http://www.youtube.com/watch?v=2A7IdBx928A



Autism Spectrum Disorders (ASDs)

- All ASDs are characterized by difficulties regarding
  - Social interaction
  - Communication
  - Atypical, repetitive behaviors
- There is a wide range of symptoms, severity, and other manifestations of ASDs.

Statistics

- Male to female ratio is 4:1
- Females tend to be more seriously affected than males.
- Females are more likely to have family histories of cognitive impairments.
- ASD affects people of all races, ethnicities, and socio-economic levels.
- Prevalence: 1 per 88 children
- Approximately 1.5 million people in the United States have an ASD.

Characteristics

3-4 months

- No grabbing or gripping objects
- Poor head support
- Difficulty following or focusing on objects
- No interest in hands or feet
- No attempts to place objects in mouth

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7 months

- Rigid or loose movements
- Failure to demonstrate physical affection (e.g., resistant to cuddling)
- No response to emotions, physical contact, or sounds
- Caregivers experience difficulty soothing the baby
- Physical delays, such as inability to roll over, hold up head, or sit with help from caregiver
- No participation in simple games

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12 months old

- Physical delays, such as not standing up with help, no crawling, or crawling with one side of the body dragging
- Lack of physical communication or gestures, including waving
- Lack of participation in games, such as hiding toys or not looking for items hidden by caregiver
- Inability to say individual words, such as “Dada” “Mama” or “cookie”
- Absent or minimal functional and/or symbolic play
- Absent or minimal gestures, pointing, or waving
- Absent or reduced babbling; some babies may produce clicks, screeches, and nonsense syllables

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24 months

- Not speaking in phrases (at least 2 words at a time)
- Knowing fewer than 15 words
- Inability to follow basic instructions
- Not imitating others' words or activities
- Does not know how to use a toothbrush, hairbrush, eating utensils, or a toy phone
- Physical delays, such as not walking by 18 months old or walking on tiptoes
- Absent speech by age 16 months
- Absent 2-word phrases

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36 months

- Avoids eye contact with others
- No interest in make believe or pretend play
- No interest in playing with toys and other children
- Unable to work simple toys or objects
- Unable to speak in short phrases
- Slurred speech accompanied by frequent drooling
- Difficulty copying objects; for example, being unable to draw a circle
- Attachment to inanimate objects (e.g., strings, rubber bands)

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- Interests, activities, and play are rigid, repetitive, and monotonous
  - For example, knowing dates, radio station call numbers, and numbers
  - For example, banging and lining up objects
- Self-stimulation: Repetitive behavior not appearing to serve a specific purpose other than self-stimulation
  - For example, swishing saliva, twirling objects, patting cheeks, flapping/twisting hands or fingers, clapping, complex whole body movements (e.g., rocking, dipping, swaying), unusual posture (e.g., walking on tiptoe), teeth grinding
- Self-injurious behavior: Repeated self-abuse
  - For example, biting, scratching, poking, banging head, and/or other body parts

Associated Features

- Sensory Processing Disorder (SPD): Inability of the nervous system to organize and process sensations from the body and the environment. A child with ASD may be hyposensitive or hypersensitive to sensations. *(Please refer to handout regarding SPD.)*
  - Tactile: Sensation derived from stimulation to the skin
  - Proprioceptive: Sensation derived from movement (e.g., speed, rate, sequencing, timing, force); derived from stimulation to the muscles, and to a lesser extent, joint receptors, especially from movement
  - Vestibular: Sensation derived from stimulation to the inner ear; movement through space and posture
  - Visual: Sensation derived from stimulation to the visual field
  - Auditory: Sensation derived from stimulation to the ear and eardrum
  - Oral: Sensation derived from stimulation to the mouth, lips, tongue, and teeth

(continued)

- Autistic thinking: Preoccupation with inner, private world; mental activity is not congruent with logic or experience
- Impaired abstract thinking (e.g., humor, irony)
- Learning disabilities
- Impaired concentration and attention span
- 40% of children with ASD meet criteria for Moderate to Severe Intellectual Disability, 30% meet criteria for Mild Intellectual Disability, and 30% do *not* meet criteria for Intellectual Disability.
- Emotional problems, mood lability
- Mood incongruent with environment/situation
- Anxiety, obsessions
- Withdrawal, inability to express emotions
- Catastrophic reaction to minor changes (e.g., furniture arrangement, new set of dinnerware)
- Fear response in non-dangerous situations, lack of fear response in dangerous situations

(continued)

- Behavioral difficulties
  - Physical aggression
  - Impulsive and/or calculated physical assaults
  - Temper tantrums
- Hypoactivity
- Insomnia
- Seizure disorder
  - 4% to 32% of people with ASD experience grand mal seizures at some point during their lives.
  - 3% to 25% of people with ASD are diagnosed with epilepsy.
  - The occurrence of seizures peaks in early childhood and again in adolescence.
  - Seizures may be resistant to medical interventions.
  - 10% to 83% of people with ASD have abnormal EEGs; no finding is specific to ASD.

(continued)

- Tourette Syndrome
- Feeding/eating disorders
  - For example, restricting foods in diet, pica
- Upper respiratory infections (URIs)
- Asthma, allergies
- Persistent viral infections
- Immune and autoimmune disorders
- Vitamin/mineral deficiencies
- Gastro-intestinal disorders (19% to 20%)
  - For example, Colitis, Crohn's Disease
- Bowel problems
  - For example, constipation, diarrhea
- Enuresis

Etiology

- Researchers suspect a *combination* of genes, between 5 and 20, increase the chances of a person having ASD. No single gene has been identified.
- Researchers suspect spontaneous genetic mutations due to environmental factors (e.g., pesticides, flame retardants), parental age, and lifestyle cause ASD in approximately 1/2 to 2/3 of cases.
- Researchers suspect heredity causes ASD in approximately 1/3 to 1/2 of cases.
- The concordance of ASD in monozygotic twins is 30% to 90%.
- There is an increased likelihood (i.e., 3% to 10%) of ASD among siblings.
- Parents and relatives exhibit mild impairments regarding social skills, communication skills, and ritualistic and repetitive behaviors.

Assessment

- Diagnosis consists of two stages:
  - Developmental screenings during well-child checkups
  - Comprehensive evaluation by multidisciplinary team
- Assessment includes:
  - Medical examination
  - Child's medical history
  - Family members' medical histories
  - Physical examination
  - Blood work and urine analysis: Metabolic disorders and genetic disorders
  - Neurological evaluation: Head circumference, brain MRI, EEG

(continued)

- Hearing tests
  - Behavioral audiometry: Child indicates if tones of different volumes and frequencies are played.
  - Brainstem auditory evoked responses (BAER): Child is sedated and electrical responses of brain are monitored while tones of different volumes and frequencies are played.
- Cognitive and behavioral assessments
- Speech/language pathology evaluation
- Occupational therapy evaluation: Ability to participate in activities of daily living, sensory functioning
- Physical therapy evaluation: Gross motor skills

PRACTICE

12 months
http://www.youtube.com/watch?v=pLD8120eUew
30 months
http://www.youtube.com/watch?v=eVP9wN1Fqi8

Speech / Language Disorders: Interventions

(Please refer to slides 12-27 for additional interventions.)

Role of Speech/Language Pathologist

- Review information about the caregiver's concerns, child's development, child's medical history, and significant issues regarding birth.
- Assess the child's speech and language abilities, especially in regard to caregiver's concerns. Assessment areas include:
  - Oral motor skills: Strength and tone of the lips, jaw, and tongue; coordination and sequencing of lips, jaw, and tongue; swallowing
  - Intonation: Stressing of syllables, use of different pitches and pauses to indicate type and/or portion of sentence
  - Speech sounds: Production of vowel and consonant sounds, production of individual sounds and sound combinations, intelligibility
  - Expressive and receptive language skills
- If necessary, interventions for caregivers are developed to use within a child's daily routine.
- Monitor and review progress and refer child (and caregiver) to other services (e.g., audiologist), if necessary.

(continued)

Childhood Apraxia of Speech

- Focus is on improving planning, sequencing, and coordination of muscle movements for speech production
- In addition to treatment sessions, a child should practice speech at home while getting feedback from a number of senses, such as tactile cues and visual cues (e.g., using a mirror), as well as auditory feedback
- American Sign Language, Augmentative Communication Device

Dysarthria

- Slow down rate of speech
- Improve breath support to speak louder
- Strengthen muscles; increase mouth, tongue, and lip movement
- Improve articulation to increase intelligibility
- Teach caregivers and children with Dysarthria methods of listening and speaking to improve effectiveness of communication
- Augmentative Communication Device

(continued)

Orofacial Myofunctional Disorders (OMD)

- A physician, dentist, and/or orthodontist may be required if tongue pressure against the teeth interferes with typical teething and alignment of the teeth and jaws
- Treatment goals include:
  - Increasing awareness of mouth and facial muscles
  - Increasing awareness of mouth and tongue postures
  - Improving muscle strength and coordination
  - Improving speech sound production
  - Improving swallowing patterns
- If airways are blocked due to enlarged tonsils and adenoids or allergies, speech therapy may be postponed until medical treatment for these conditions is completed. If a child has unwanted oral habits (e.g., thumb/finger sucking, lip biting), speech therapy may first focus on eliminating these behaviors.

(continued)

Articulation Disorder

- Treatment components include:
  - Demonstrating to the child how to produce the sound correctly
  - Teaching the child to recognize which sounds are correct and incorrect
  - Encouraging the child to practice sounds in different words

Phonological Disorder

- Treatment involves teaching the rules of speech to help the child say words correctly

(continued)

Stuttering

- Treatment goals:
  - Teaching the child specific skills or behaviors leading to improved oral communication
    - Controlling and/or monitoring the rate of speech.
      - Learning to say words in a slower and less physically tense manner
      - Using short phrases and sentences
    - Controlling and/or monitoring breathing
- Caregivers must remember to give their child enough time to speak.
- "Follow-up" or "maintenance" sessions are often necessary after completion of formal intervention to prevent relapse.

(continued)

Voice Disorders

- Most voice disorders are harmless and disappear on their own with or without professional help.
- A child may need an assessment by a specialist (e.g., otolaryngologist) and a speech/language pathologist if he/she has a hoarse or weak voice that is getting worse or not getting better.
- Some voice disorders need surgery although this is uncommon.
- Caregiver responses
  - Let your child's voice take a "vocal nap" every day.
  - Have a meaningful conversation with your child every day. Reduce noise.
  - Institute turn-taking in conversations at the dinner table to minimize attention issues among siblings and to promote a sharing and listening environment.
  - Discourage yelling in the house and lead by example.

(continued)

Language Disorders

Caregiver responses:

- Talk a lot your child to increase vocabulary.
- Read to your child every day.
- Point out words and signs in the grocery store, at school, and outside, for example.
- Listen and respond when your child talks.
- Encourage your child to ask you questions, and give your child time to answer questions.
- Set limits for watching TV and using electronic media.
- Help your child use other ways to communicate when necessary. This may include simple gestures, picture boards, or computers that say words out loud.
- Teach caregivers, family members, and teachers ways to communicate with your child.

PRACTICE

Childhood Apraxia of Speech – 3 years
http://www.youtube.com/watch?v=szjfC9K190U
Articulation Disorder – 3 years
http://www.youtube.com/watch?v=PYxM229pAzw
Stuttering – 30 months
http://www.youtube.com/watch?v=DH0bvCbh22g

Down Syndrome: Interventions

(Please refer to slides 12-27 for additional interventions.)

- Special education
- Speech/language therapy
- Occupational therapy: Improve person's ability to participate in activities of daily living (e.g., personal hygiene, food preparation)
- Physical therapy
  - Exercises for fine and gross motor development
- Cardiologist
- Gastroenterologist
- Optometrist/ophthalmologist

PRACTICE

12 months

http://www.youtube.com/watch?v=2A7IdBx928A

Autism Spectrum Disorders (ASDs): Interventions

(Please refer to slides 12-27 for additional interventions.)

- Early intervention
  - Available for children ages birth to 3 years
  - Mandated by Part C of the Individuals with Disabilities Education Act (IDEA).
  - General requirements for access and programming in a “natural setting” are consistent across states; however, the law does little to define and describe early intervention programs.
    - Visit www.wrightslaw.com for information about early intervention.
    - Visit www.nichcy.org for information about state resources for early intervention.
  - Services available via early intervention are similar across states and may include specialized and/or inclusive preschool problems, speech therapy, occupational therapy, social skills training, family therapy, behavioral therapy, and Applied Behavior Analysis (ABA).

(continued)

- Schedule/routine: Assists in reducing resistance to major and minor changes
- Speech therapy
  - Augmentative communication devices
  - Picture Exchange Communication System (PECS)
  - American Sign Language (ASL)
  - Facilitated communication
  - Communication board
  - Total communication
- Occupational therapy: Improve person's ability to participate in activities of daily living (e.g., personal hygiene, food preparation)

(continued)

- Sensory integration therapy: Improve nervous system in organizing and interpreting environmental and somatic information, as well as formulating an appropriate response *(Please refer to handout regarding SPD.)*
- Physical therapy: Reduce muscle stiffness/tightness, improve balance and coordination, improve posture, increase muscle strength, facilitate achievement of developmental milestones
- Art therapy: Nonverbal method of expressing feelings.
- Music therapy: Singing can improve speech and language skills, movement is supported and encouraged, method of expressing feelings
- Animal therapy: Horseback riding and swimming with dolphins can improve motor skills

(continued)

Behavior therapy

- Over 30 years of research demonstrates behavior therapy improves communication, learning, adaptive behavior, and appropriate behavior while reducing inappropriate behavior.
- Based on the principle of reinforcement
  - Positive reinforcement: A reward is earned for demonstrating appropriate behavior
  - Negative reinforcement: An aversive item is removed for demonstrating appropriate behavior
- Behavior therapists collaborate with parents and family members, school personnel, and other professionals.

(continued)

Behavior therapy models

- Lovaas
  - Guided by Applied Behavior Analysis (ABA)
  - Consists of an intensive behavioral intervention carried out during early development
  - Discrete-trial teaching, breaking skills down into most basic components, and rewarding positive performance
  - Previously used aversives to punish unwanted behaviors
- Applied Behavior Analysis (ABA)
  - Science of applying experimentally derived principles of behavior to improve socially significant behavior
  - Behaviors are defined in observable and measurable terms in order to assess change over time.
  - Behavior is analyzed within the environment to determine what factors are influencing the behavior.

(continued)

- Floor time (also known as the Greenspan Method)
  - 20- to 30-minute period to get on floor with child to interact and play in a spontaneous and fun manner
  - By interacting in ways capitalizing on emotions and by following interests and motivations, the child is helped to climb the developmental ladder.
  - A child learns to engage in dialogue, take initiative, to learn about causality and logic, and to solve problems.
  - The caregiver becomes the child's very active play partner whose job it is to follow the child's lead and play at whatever captures the child's interest. It is done in a way that encourages interaction.

Caregiver / Family Training and Support

Caregiver/family responses to a child being diagnosed with ASD:

- Frustration, confusion, worry, anxiety and depression, anger, resentment, helplessness, defeat, and fear
- Grief is a common emotion experienced by caregivers and families.
- Concern about a child with ASD achieving independence; for example, will the child have relationships (platonic, romantic), have a family, have an independent home, and keep a job?
- Caregivers and siblings of a child with ASD may experience social stressors, and a child with ASD may be disruptive to family functioning.

(continued)

- Caregiver and family training
  - Using caregivers and family members as therapists is superior to treatment occurring only in a clinical setting.
  - Greatly improves generalization
- Sources of support
  - Family members and friends
  - Psychologist, family therapist, social worker, clergy member
  - Support groups consisting of other parents and family members of a child diagnosed with ASD
  - Respite care services

PRACTICE

12 months
http://www.youtube.com/watch?v=pLD8120eUew
30 months
http://www.youtube.com/watch?v=eVP9wN1Fqi8

QUESTIONS / COMMENTS

**Please refer to handout for resources and organizations regarding Speech / Language Disorders, Down Syndrome, and Autism Spectrum Disorders (ASDs).*