



Early Communication Development & Down Syndrome



Boston Children's Hospital
Down Syndrome Program

Early Communication Development & Down Syndrome

Early developmental and educational interventions along with an enriching and caring home environment foster and promote positive development for children with Down syndrome. Speech and language development can be a particular challenge for many people with Down syndrome. Many families are eager to learn ways in which they can support their child's communication and social interaction skills. A team of speech and language pathologists in the Boston Children's Hospital Down Syndrome Program created this guide to early communication development in Down syndrome. It is filled with practical strategies, ideas, activities, and resources to help families promote speech and language development in young children with Down syndrome. We are pleased to offer this guide to support families on this journey.

—Dr. Nicole Baumer

What are communication, language, and speech?

Put simply, communication is the way that we send and receive messages. Communication may involve using speech, gestures, body language, manual signs, pictures/symbols, and facial expressions. Language is the way in which we communicate thoughts, feelings, and needs with each other. Speech is the vocalized form of communication (i.e. spoken words). Speech production is a complex process that involves many systems in the body. These systems include the lungs for breath support, the vocal cords for producing sound, the size and shape of the airway, and the coordination of the muscles in the tongue and mouth to make sounds and words clear and distinct.

What should I expect for my child's speech and language development?

Speech and language skills vary greatly among children with Down syndrome. Overall, the development of speech and language skills is delayed compared to typically developing peers. Many children with Down syndrome develop non-verbal skills, such as gesturing and sign, earlier than they develop verbal communication skills.

As language development progresses, children with Down syndrome often have an easier time learning new words (vocabulary) than learning how to put the words together in sentences (syntax).



Why does my child have delayed speech and language skills?

Several issues can affect speech and language development for children with Down syndrome:

- 1) Cognitive development
- 2) Hearing problems in some children
- 3) Decreased muscle tone, strength and coordination in mouth and throat

What skills are needed before learning to talk?

Early pre-linguistic skills initially develop that help children learn to speak. All children must develop certain skills, called "pre-linguistic skills" before learning to speak. These skills are listed below. Some of these skills develop in the first few months, and some develop more slowly over several years.

- Ability to imitate sounds
- Visual attention (look at speaker, look at objects)
- Auditory skills (listening to language, music, etc., for increasingly longer times)
- Cognitive skills (understanding cause and effect relationships, object permanence)
- Social skills (turn-taking, such as peek-a-boo or rolling a ball back and forth)
- Play skills (playing meaningfully with toys)

Total Communication Approach

The total communication approach involves using all available means of communication including speech, sign language, gestures, pictures, and/or simple voice output communication aides (such as a button that a child can press to play a short recording). The goal with total communication is to use a multi-sensory approach (i.e., visual, auditory, tactile, etc.) in order to encourage communication. In fact, many children with Down syndrome process information better when they can see it (visual processing) compared to when they can hear it (auditory processing). Therefore, the total communication approach is especially important.

The timing of development of first words varies greatly in children with Down syndrome, ranging from 1 year to 5 years of age. Children with Down syndrome are often capable of learning to use signs or pictures to communicate much sooner (even as early as 10-12 months of age) than verbal speech skills develop.

Ways to support your child using a total communication approach:

- Provide your child with additional visual input by pointing to objects and/or pictures that you are describing as you speak.
- Use sign language for basic words as you say them. Using sign language with speech has been shown to increase understanding and also offers the child an additional method for expression.
 - » Teach your child signs for meaningful words in their routines (eat, bath, play, etc.).
 - » Teach signs for common objects, people and actions (e.g. cracker, mommy, eat) as these help develop vocabulary.
 - » Try not to overuse signs like "more" and "finished" that do not refer to specific objects. One of the goals of using sign is to help children learn to express their



needs and interests and this is accomplished through learning words that refer to specific objects, actions, or people. When your child has mastered the sign “more,” encourage him or her combine it with something specific (“You want more? More what? Cracker? Show me more cracker.”)

What are the benefits of a total communication approach?

Using multiple modes of communication will enable your child to communicate earlier than if using speech alone. This will help to prevent frustration, teach your child to initiate communication, and support overall language development.

Will using a total communication approach delay my child’s speech development?

Many studies have been conducted to address this question. The results from multiple studies have shown that a total communication approach does not slow down speech development. In fact, most of the studies showed that a total communication approach increased speech production.

Activities to Promote Speech and Language Development at Home

Interaction Style

- **Provide a language-rich environment at home.** Talk to your child throughout the day during familiar activities such as bath time and feeding time. Use simple language to tell your child what is happening in the environment. Use sign language to highlight key words.
- Play games that provide opportunities for face-to-face time and interaction. These may include games such as peek-a-boo, pat-a-cake, bubbles, tickles and mirror play.
- Comment on sounds in your environment (e.g., doorbell, ice clinking in a glass, dog barking, etc.) to increase your child’s auditory awareness.
- Be **highly responsive** and **less directive**:
 - » **Follow your child’s lead!**
 - » **Expand** your child’s initiations with comments and questions (“Yes! That’s a dog! You saw the dog! Is it a big dog? Wow, it’s a big fuzzy dog!”)
- **Respond positively** to all attempts at communication (“Oh you signed more! More what? Do you want to play ball more?”)
 - » Language is more than spoken words. When teaching a word or concept, help convey meaning to the child within play, music, or multi-sensory activities.
 - » **Make the language “real” and concrete** for the child. For example, if you were teaching the word “big” you could say “let’s make a big pile of blocks!” Point out a big building.
 - » **Provide many models.** Children need many exposures and repetition to learn.



Music

- Use music and song to promote language and speech.
- Sing face-to-face so your child can see your facial expression and the movements your mouth makes when you form words. It can be helpful and fun – to exaggerate your facial expressions.
- When singing familiar children's songs, encourage your child to fill in words, gestures and sound effects.



- **Pause** so your child can take a turn.
- Sing songs **slowly** to help your child join in and allow time for your child to really hear the words.
- Make the important words stand out by slightly increasing your volume and/or animation.
- Use **actions and gestures**.
- Make songs part of your daily routine.
- Encourage your child to **make choices** about which songs to sing.

Play

- Engage your child in **cause-effect play**. Toys that promote cause-effect play include pop-up toys and toys that make music or light up when a button is pressed.
- Promote **functional object** use within play, such as bringing a phone to the ear or combing hair.
- Play **anticipatory games** like "Ready, Set, GO!", "1-2-3-Jump!" to help your child increase response to language.
- Play games that **encourage motor and verbal imitation**. Begin by imitating your child's actions to encourage imitation of your actions (e.g., clapping, hands up, shaking a toy). Move toward more verbal imitation. Initially, encourage imitation of sounds and then expand to new sounds.
- Use **pretend play** to encourage expanded language development. Be more of a play partner than a teacher or boss.
 - » When you and your child are engaged in pretend play, **narrate what you are both doing** and encourage your child to do the same. For example, when playing with a doll you could say, "Baby is hungry. Time to eat! Hungry baby! Here's a cookie."
 - » Encourage **variety in pretend play** by expanding beyond what your child is doing and show different ways to play with toys. For example, when playing pretend in the kitchen, you can have your child serve the food to stuffed animals and then have the animals "talk" to one another.
 - » Expand on language skills by **role-playing**. Play house, doctor, and store using dialogue, props, and dress-up clothes. Do the same with a dollhouse and its props, acting out scenarios and making the dolls talk.

» **Suggested toys for pretend play** include:

- dolls with accessories
- stuffed animals/ figurines from familiar television shows
- kitchen/ cooking items/ foods
- work bench/ tool kit
- school bus and other vehicles
- farm house with animals
- doll house or garage
- house cleaning set
- toy telephone
- doctor kit



- Play **“following directions”** games such as “Simon says.” Give your child the chance to both give and follow directions containing position, size and quantity concepts (e.g., “all”). Increase the length and complexity of directions as ability increases:
 - » Get the little ball
 - » Hide behind the big, blue chair
 - » First put 2 balls under the chair and then all the cars behind the couch
- Engage in **table top activities** including puzzles, drawing, Play Doh or board games. Encourage your child to attend to tasks and to remain seated at the table until the task is completed. Begin with short time spans. Table top activities also provide excellent opportunities to expand on language skills and concept knowledge.

Books

- Read **simple, colorful books**. Encourage your child to choose the book, help hold it, and turn the pages. When a favorite book becomes familiar, pause to see if your child will complete the sentence with a gesture, sound, word or phrase. Use an animated voice and facial expressions to help your child maintain attention and interest in the book. Encourage your child to point out and identify pictures.
- **Follow your child’s lead during shared book reading:**
 - » Observe what your child does with a book
 - » Wait until your child is done with a page before moving on
 - » Listen carefully to her words or sounds
- **Read stories with easy-to-follow plots**. Expand the story beyond just the words on the page by providing additional descriptions of pictures (e.g., “Oh look at that bird! He’s a little blue bird. There are his wings, feathers and a beak”). Have your child identify and label the pictures in books.



Use Pictures!

Take pictures of your child's favorite toys, food, and other items in her environment.



Mommy



Daddy



Please



Thank You

Point to the pictures as you talk about or show the objects to help build your child's understanding of symbols. Allow your child to make choices for activities by pointing to the photographs. You can also do an "image" search for pictures of foods, the toys your child likes.

Additional ideas:

- Put picture labels on toy bins and cabinets
- Put pictures of food up on the refrigerator using Velcro so your child can take the picture off to request something to eat.
- Show two pictures to give a choice between activities ("Do you want to play ball or play with your cars?")
- Make a book of pictures of daily activities and objects that your child can use to make choices or talk about the day
- Make a visual schedule for everyday routines (e.g. wake-up, use the bathroom, get dressed, eat breakfast, brush teeth, play time!)
- Make a book to describe an upcoming adventure (e.g. going on vacation or going to the doctor). Showing pictures in advance and talking about the plan can help prepare your child for new experiences. The idea of using a story to help prepare a child in this way is sometimes called a "social story."



For More Information:

Angela Lombardo

857.218.4329

angela.lombardo@childrens.harvard.edu

childrenshospital.org/downsyndrome

www.facebook.com/bostondsp

Resources for Parents and Professionals

COMMUNICATION

- **Early Communication Skills in Children with Down Syndrome: A Guide for Parents and Professionals**, Libby Kumin, Ph.D., Woodbine House Press 2003
- **Play to Talk: A Practical Guide to Help Your Late-Talking Child Join the Conversation**, James MacDonald Ph.D. and Pam Stoika Ph.D., Kiddo Publishing 2007 (Not specific to Down syndrome, but an easy to read, wonderful resource for promoting language in young children)
- **Hanen Program (www.hanen.org)**
This website provides information on book resources including *It Takes Two to Talk* and *You Make the Difference*. These books are not specific to language development in children with Down syndrome but are good, practical resources.
- **See and Learn (www.seeandlearn.org)**
Set of activities designed to promote development of language, reading and cognitive skills in young children with Down syndrome, using visuals.

PLAY

- **The New Language of Toys: Teaching Communication Skills to Children with Special Needs**: Sue Schwartz, Ph.D. and Joan E. Heller Miller, Ed.M., Woodbine House Publishing 1996.
- **Creative Play Activities for Children with Disabilities: A Resource Book for Teachers and Parents**, Lisa Rappaport Morris and Linda Schulz, Human Kinetics Press 1989.

WEB RESOURCES FOR SIGN AND PICTURES

- **www.signingsavvy.com**
This website has a video sign language dictionary
- **www.seeandlearn.org**
Down Syndrome Education International has created research-based tools for teaching speech and language skills. These are available for purchase from their website.
- **www.visualaidesforlearning.com**
- **<http://carolgraysocialstories.com>**

Rebecca McCarthy is a Speech-Language Pathologist within the Augmentative Communication Program (ACP) at Boston Children's Hospital. Rebecca specializes in augmentative communication strategies and tools for a wide variety of communication needs. Her primary clinical specialties include children and adults with Down syndrome, cerebral palsy, and other complex communication needs.

Katherine Engstler is a Speech-Language Pathologist at Boston Children's Hospital. She specializes in the diagnosis and treatment of pediatric feeding and swallowing disorders, early language development in Down syndrome and resonance disorders. She works in a number of specialty clinics including the Down Syndrome Program.

Michelle Skeldon is a speech-language pathologist at Boston Children's Hospital. She specializes in the evaluation and treatment of children with feeding and swallowing difficulties. Michelle works in a number of specialty clinics at the hospital including the Down Syndrome Program and the Growth and Nutrition Program, a clinic that specializes in the evaluation and treatment of children with poor weight gain and feeding difficulties.

This document was edited and reviewed by Dr. Emily Jean Davidson and Dr. Nicole Baumer.

The Down Syndrome Program is grateful for the funding and support provided by the Leadership and Education in Neurodevelopmental Disabilities (LEND) Program, a program of the Institute for Community Inclusion at Boston Children's Hospital for the production of this booklet.

