

Part 2 – Developing speech while maintaining language and communication

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Your child has been communicating with you from birth with gestures and eye gaze, crying and smiling. Your child has now mastered the pre-language skills, and is ready to communicate with you using language. . . but, he or she does not yet have the neurological and physiological skills to speak. The problem is that your child may not be developmentally ready to use speech. Your child may not have mastered all of the pre-speech skills, so there may be a period when he or she needs a transitional language system with which to communicate until he is ready and able to use speech. So, how do you help your child continue to progress in communication skills, language skills, and developing additional concepts? And, how do you help your child master the skills s/he will need to be able to speak?

What are the pre-speech skills?

- Respiration
- Feeding skills
- Hearing
- Vision
- Tactile skills
- Imitation skills
- Oral motor skills
- Motor planning skills
- Sound production skills

Once your child can use language, the skills above will enable him to be able to speak. At the same time that your child is using a transitional communication system to interact and to continue to learn language, you and the SLP are continuing to work on the skills that will lead to speech. Respiration and feeding address skills for speech output. Respiration is directed towards lengthening the exhalation (breathing out) phase of breathing. Feeding strengthens the muscles of the lips, face and oral cavity and provides practice in muscle movement. If your child is having difficulty nursing or bottle feeding, transitioning to solid foods, moving food around in the mouth and/or chewing, you want to seek help from a feeding specialist. Monitoring your child's hearing and vision is important because your child learns to speak by listening and watching the people around him. For hearing, the Down Syndrome Medical Guidelines document the need for "brainstem auditory evoke response testing" and "otoacoustic emission testing" between birth and 3 months of age,

additional hearing screening at 6 months of age, and the need for the pediatrician and otolaryngologist (ENT) and audiologist to monitor your child.

Through vocal play and babbling, your child learns what oral movements feel like (tactile skills), and develops feedback loops. Often, babies and young children with Down syndrome are uncomfortable (hypersensitive) with their face and lips being touched, or are hyposensitive to their face being touched and need more input through touch. Through vocal play, your child learns to imitate your movements, e.g. throwing a kiss or smacking their lips. It is best to work with a professional to help improve muscle strength, flexibility and range of motion. You need both muscle movement and planning of the movement to make speech sounds and words. Generally, through vocal play and practice, your child develops the ability to automatically program the muscle movements without thinking about the movements. The ability is out of awareness. When a child has difficulty with oral motor planning, it is known as verbal apraxia, a difficulty that requires direct speech intervention.

Your child learns to say the words that s/he already understands by imitating your words. That is why a child's native language is the language s/he learns in their environment. Since your child has already mastered the skill of referential knowledge, i.e. the connection between objects, people and the words that represent them, your child is on the road to beginning to say those words. S/he needs to learn how to imitate your movements and sounds. This is learned through play.

Imitation Skills

- Toy
- Body
- Oral Movements
- Speech Sounds
- Words/ Speech

When children learn language, they are imitating words that their parents and other adults and children in their environment say. To teach children how to imitate, start with a toy (e.g., show them how to move a toy car by putting your hands on their hands, and moving the truck). When they can imitate play with toys, move on to imitation of body movements such as clapping their hands when you clap your hands. If you can, use their older brother or sister as a model and have them imitate you clapping your hands. Then give your child a turn at imitating the clapping movement. You may need to put your hands around your child's hands and "walk" then through the movement. Then, move on to imitating oral movements such as throwing a kiss or popping your lips or clicking your tongue. Then add speech sounds, such as "lalala." And "bababa". Finally, help your child imitate real words.

Oral motor pre-speech skills

- Muscle Tone (low to high)
- Strength (weak to strong)
- Range of Motion (limited range of movement to free range of movement sufficient to make speech sounds)

When your child clicks their tongue, blows bubbles, and eats solid food, she is strengthening her tongue muscles. A speech-language pathologist can suggest exercises that will help your child increase muscle tone, strength and range of motion. The goal for the child is to be able to make these movements independently. The American Speech-Language-Hearing Association, the professional association for speech-language pathologists and audiologists states that only evidence-based methods should be used in treatment. SLPs and researchers have not collected sufficient data to demonstrate that oral motor skills therapy is effective, so school systems often will not provide treatment for oral motor skill difficulty stating that the treatment methods are not evidence based. The research literature does not state that oral motor therapy is ineffective, just that it has not been proven to be effective. It leaves the decision on which treatment methods to use, to the clinical judgment of the SLP.

First Words

Your child's first words will be the names and titles of people in the family and the names and titles of caregivers. Words like mommy, daddy, papa, nana, bubbie, nona, and names of brother and sisters. There will be more names and nouns, and fewer verbs. His speech production of those words may not be exact; but he will be using the same sounds whenever he is saying the word, e.g. da or ti for daddy, and he will show recognition that the word means daddy. Your child will use high frequency, high information words that will get responses, actions and joy from people in the child's environment.

What can I do to improve my infant & toddler's ability to communicate?

The speech-language pathologist (SLP) is the professional who will work with you and your child on communication skills. In the first year, she will help you learn more about the pre-speech and pre-language skills and how to work with your child. She will work on the muscles for speaking through feeding therapy and through imitation and vocal play. Your child communicates from birth. During the first 12-18 months, your child masters the pre-language skills. Many children with Down syndrome begin to say words as early as 15 to 18 months of age, but it is more common for a child to master all of the prelanguage skills, use a transitional communication system such as sign language and then begin to speak between 3 and 4 years of age. If your child is ready to use language, but is not yet able to speak, it is important to use a transitional system such as sign language or the picture exchange system (PECS) so that your child can continue to communicate and learn more vocabulary and language skills until he is able to speak.

What are transitional communication systems? How do I know which system is right for my child?

Transitional communication systems are alternative communication systems that enable your child to communicate during the period when they have mastered all of the pre-language skills, i.e. they are ready to use language to communicate, but they cannot yet speak. You can request an AAC (augmentative and alternative) from your child's IFSP/IEP team. This evaluation may be done through the local school system, if they have an AAC team; through a state special education/rehabilitation agency; or, through a private outside agency. The goal of this evaluation will be to determine and prescribe the ideal system for your child's strengths and needs.

When your child is ready to communicate using language, they need a communication system that will enable them to continue communicating with you. It needs to be a system that is usable for your child and understandable by you and others in your child's environment. If your child does not have a way to communicate using language, and if you don't understand his/her communication attempts, your child will get frustrated. So, there is a need for a transitional communication system (e.g. sign language, communication board or communication app) to bridge the gap when your child is able to use language, but is not yet able to speak. The most frequently used transitional language systems are sign language (total communication in which sign and speech are used to teach language), the Picture Exchange Communication System (PECS), communication boards, and electronic communication devices. Your child will be using a transitional communication system to enable your child to communicate.

Total communication is the communication system most frequently prescribed for children with Down syndrome. Total communication means that your child and you both learn sign language. When your child signs, you accept that as their means of communicating, but you say the words for them. When you sign, you also speak the words; you do both when you communicate with your child. The reason that total communication is preferred is that it uses no equipment that has to be carried around, and the child generates the signs that represent the words in a similar way that the brain would be encoding words.

Other communication systems that can be used are communication boards. In these systems, your child will point to a picture or photo to make requests, to communicate their needs. Low tech communication boards are simply paper picture boards. You would start out with the number of choices that your child is able to handle, e.g. 2-4 pictures to begin, e.g. a favorite toy and a favorite food. You also can use multiple communication boards, e.g. one in the kitchen to request food items, one in the bedroom to enable the child to request clothing that she likes, etc. There now are communication apps that you can use on an iPad, tablet, or smartphone. These systems will often use synthesized speech output. For example, your child will be pointing to a photo/image of a glass of water, and the system will say, "I'm thirsty". There also are high-tech systems, software programs on a computer

or laptop that your child can be taught to use, that will provide a communication system that can substitute for speech until your child is able to speak.

When your child learned the early communication and pre-language skills, your child learned communicative intent, i.e. sounds or pointing had an effect on their environment, and turn taking, i.e. learning the roles of speaker and listener. What if your child does not understand how to request, or does not understand communicative intent? This is not unusual for children with Down syndrome, but is often the case when a child has co-occurring of DS-ASD. The AAC communication system that can teach a child how to communicate is the Picture Exchange Communication System (PECS). The child is taught that choosing and presenting a picture/photo (speaker) to a communication partner (listener) will result in the communication partner responding with what the child asked for, e.g. a pretzel. The SLP is teaching the child how to communicate by using pictures/photos until they are able to speak. During the same period that your child is using a transitional communication system, you want to work with an SLP to teach your child the skills that s/he will need for speaking.

When children are not provided with a transitional system and are unable to communicate, they become frustrated. A system will also enable them to continue to progress in language. Your child will learn new vocabulary words and can progress from one-word to two-word phrases using a transitional communication system. At the same time, your child will continue with speech therapy to help them learn the pre-speech skills so they will be able to speak. The majority of children and adults with Down syndrome will use speech as their communication system, but the majority do require a transitional communication system before they are able to speak.

For further reading:

Kumin, L. (2012). *Early Communication Skills for Children with Down Syndrome (third edition)*. Bethesda, MD: Woodbine House.

Parent Resource Information:

Go to <https://www.ndscenter.org/programs-resources/speech-and-language/>

- The Basis for Speech, Language and Communication in People with Down Syndrome
- Speech and Language Resource Guide for Parents of Infants and Toddlers with Down Syndrome: First Words to Phrases
- Resource Guide to Oral Motor Skill Difficulties in Children with Down Syndrome
- Resource Guide to Childhood Apraxia of Speech in Children with Down Syndrome