

# **MARVELOUS MOUTH MUSIC**

## **Building Blocks for Speech**

Infants play with their voice and sounds for nearly a year before saying their first word. They continue to combine unique sound combinations and vocal patterns with early words for their first two years in preparation for making sentences. During this process they explore the melody patterns of the voice that enable them to sound like other speakers in their environment. The babbling voice of an American baby reflects the timing and intonation patterns of caregivers who speak English. Infants from families speaking Swedish, French, Chinese, or Swahili each babble a unique sound version of their native language. They learn through vocal play and movement and express joy, excitement, pain and disappointment through their voice. They playfully produce all of the sound combinations found in their first language. During this pre-speech period the infant and young child lay the foundation for speech that is clear and melodic.

Children build speech from a series of non-meaningful sound combination patterns. Some researchers have said that before the age of 9 months babies have produced all the sounds of all languages. As they develop and refine their babbling patterns, they reduce the sound-combination choices to the sound patterns they hear in the languages spoken in their home. New sounds are formed by changing the shape and the size of the oral cavity. Babies develop this coordination as they explore toys in the mouth, and learn to chew and handle more complex foods. Babbling is most frequent and varied between 9 and 15 months when they have developed advanced mouthing skills and the ability to bite and chew. The widest variety of new sounds and sound combinations happen during a mealtime!

When children miss the important pre-speech stages of cooing, babbling, and jargonning with a wide variety of sounds and vocal variety, they lack the building blocks for speech production. Many children with sensorimotor problems experience difficulty with the progressions of pre-speech development. The child's underlying muscle tone may be too high or too low, affecting movement coordination for breathing, vocalization, feeding, and early sound play development. Other children live in a world where sensory information is confusing or threatening. They are uncomfortable with sensory input, including the sound of their own voice. They may dislike the feeling of fingers, toys, or solid foods in the mouth. This lack of sensorimotor input and exploration with the mouth may result in reduced experience with the movements that create different vowels and consonants. A large number of children with these challenges are late talkers. They may not begin to make sounds until they are 2 or 3 years old.

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By that time the world is anxiously waiting for their first word. Six-month old infants who babble “mamama” are not assumed to be saying words. Adults will respond by smiling and making sounds back at the baby. The infant responds by repeating the sounds with many modifications in vocalization and vowel and consonant combinations. When a silent two-year-old babbles “mah-mah”, adults immediately turn the sound play into the word, *mama*. The child may learn to repeat the single word, but does not engage in the playful exploration of sounds and the voice that would lead toward the easy production of speech. When these children are taken back to a low linguistic-complexity level and encouraged to enjoy sound for sound sake, they develop more of the spontaneous combinations that can be built into a wide variety of words. Interestingly, many children with severe expressive speech delays go back to this sound play stage when a new baby joins the family and invites everyone to babble at 6-9 months! Often this will mark the beginning of speech progression for the older child!

## Development of Marvelous Mouth Music

The recording, *Marvelous Mouth Music*, was developed in 1998 through a collaboration between Suzanne Evans Morris, Aubrey Carton, and Bob Wiz. It was produced and released by Belle Curve Records of Boulder, Colorado. The recording gives children an opportunity to develop early pre-speech abilities in a context of musical fun. Older infants and toddlers can be introduced to these concepts before speech has developed. Children who are already talking, are given permission to go back to the earlier stages of sound play that they have missed. Within the context of music and mouth play, they can discover the joyful noise that their voices can create.

The songs were created to provide a montage of the movement and sound patterns that accompany early pre-speech development. Melodies were selected from the realm of traditional music, or were created with an ear for simple, repeated melodic phrases and a clear rhythm. Although specific sound and pre-speech patterns were built into each song, the emphasis was played on the delight of making sounds. This is not a tape about speech drill and practice. It is a tape of songs and sound variations that are fun and playful.

The songs of *Marvelous Mouth Music* were built upon the following foundational guidelines from pre-speech development.

- Children learn concepts and speech patterns most

easily when they are combined with music. This is the basis for the early acquisition of commercial jingles, or the popularity of alphabet songs.

- Movement and speech are closely linked. Infants initially vocalize primarily when moving. Dynamic stability and mobility create the foundation for respiratory-phonatory-articulatory competence.
- Suprasegmentals are the foundation for intelligible speech. These are the aspects of speech that are most closely related to music. Suprasegmentals include voice pitch, intonation, rhythm and stress patterns, loudness, and duration of sound. They come in developmentally in the second half of the first year, before the child has developed single words. When words are added to sound, these variations of the voice are already in place to define syllables, phrases, words, sentence breaks and sentence types. Infants will babble and then jargon using the suprasegmental patterns of the languages spoken in their home.
- There is a hierarchy of complexity that influences the level of difficulty for early speech production. Spontaneous sound play without word meaning is the easiest for a child to produce. Emotional sounds (i.e., laughter, coughing, crying), environmental sounds (i.e. “puh-puh” / boat sound) or animal sounds (i.e. “moo”/cow) create the easiest simple words. Short sounds are easier than long sounds because they require less control of breathing. The repetition of the same consonant-vowel combinations (i.e., “bah-bah-bah”) is much easier than the repetition of syllables that are different (i.e. “bah-dah-gah” or “bah-boo-bee”). There is a progression of difficulty in developing the consonants used in sound play and speech. The easiest ones involve simple contact of the lips (m, p, b), the front of the tongue (t, d, n), and the back of the tongue (k, g, ng). Consonants requiring a higher level of physical coordination (s, z, l, r) come in much later.

## The Songs

*Marvelous Mouth Music* provides songs that support the child’s development of movement, vocal play, oral play, sound play and exploration. Even though you they focus on specific opportunities for pre-speech development, adults need to remember that children learn best when they are having fun. Most typically developing children can enjoy the

songs without specific attention to therapeutic activities. Other children who have sensorimotor challenges can benefit from specific activities from the following areas or modifications of the songs. Parents and therapists can select activities that fit the specific song and the child's developmental needs. Specific suggestions are provided for building and stabilizing postural tone, facilitating body movement to the rhythm and flow of the music, introducing rhythmical play with the face and mouth, encouraging vocalization and sound play, and incorporating language and total communication activities.

The songs of *Marvelous Mouth Music* have five different progressions which describe the difficulty or complexity level. Parents and therapists can take these into consideration as they select a program of specific songs for children.

- **Musical Complexity**

Songs that have fewer notes and more repetition of notes and phrases are easier than songs that have more notes and more variations in arranging these notes. Tunes found in traditional music are more familiar and archetypal. Because they have been hummed and sung by generations of parents and children, they are often easier for new generations to learn than melodies that are newly composed.

- **Environmental Complexity**

Playful exploration of sound is easy for children who can turn on their voices and move their mouths to make interesting sound changes. This exploration is spontaneous and does not carry any expectation from others. The child is free to enjoy the voice and make a joyful noise. As skills develop, the child learns that others anticipate meaningful words, and are disappointed if they are not used. Demands are often made to pronounce the words in a specific way. The songs on *Marvelous Mouth Music* cluster at the low end of environmental complexity. Many invite children to make whatever noises or sounds they prefer. Others suggest specific sounds or words, but invite alternatives if the child cannot follow the specific vocal pattern.

- **Language Complexity**

Both understanding and expressing the rules of a language are involved in language complexity. Songs that ask a child to follow a story line or series of commands are more challenging than songs that are created from a series of sounds without specific meaning. When language demands are simple, vocalization and sound play are easier.

Songs that come from the emotions and are driven more by affect than by cognitive thought are usually easiest. Children laugh, giggle, sneeze, cry, and fuss long before they understand how to make other sounds. Words with a high emotional drive such as *uh-oh*, *wow*, and *oh-no* are easy for children. Imitation of animal and environmental sounds is also at the easy level of sound production. Later, children sing songs with repetition of numbers and letters. Although these are more language-based, they are an automatic series of words that do not require an understanding of the meaning behind the words. Imitation of a series of nonsense syllables falls into the same general category. The child imitates a specific sound pattern, but there is little or no meaning behind it. Gradually children imitate words with real meaning, and begin to use them to name or label something in their environment.

- **Vocal Play Complexity**

A single vowel that is short in duration and soft in loudness is the easiest to make. Longer sounds and louder sounds require more respiratory support and control of the voice. Children are initially able to increase one of these features at a time. For example, a child may be able to sustain a quiet voice for a long time, but have difficulty increasing loudness. A loud voice is easy when the voice is on for a brief period. Emotions increase the child's ability to make a long and loud voice at the same time (i.e. *crying*, *laughing*, *fussing*, *giggling*). Changes in pitch and movement from one pitch to another create the intonation patterns of the voice that give it melody. Overall complexity increases as the child combines the sounds of the voice with the movement of the mouth in babbling and other sound play.

- **Articulation Complexity**

Simple vowels are the easiest to produce, first as a single extended sound (i.e., *ah*, *oo*) and then with the changes in jaw, tongue, and lip position that results in a change from one vowel to another (i.e., *ah-ee*, *oo-ah*). If the lips or tongue close the oral cavity for a long period, the sound will resonate through the nasal cavity instead of the oral cavity. You will hear an extended consonant such as *mmmm*, or *nnnnn* instead of a clear vowel. Many children will begin to play with variations in loudness, duration, pitch, intonation, and rhythmical stress as they produce these vowels and extended nasal consonants.

As these extended sounds are produced, the child may move the tongue or lips into a position that briefly closes the oral cavity. When the lips come

together and release quickly, the consonants *m*, *p*, and *b* are produced. A similar closure with the front of the tongue against the hard palate will produce the plosive consonants *n*, *t*, and *d*. If the back of the tongue is elevated, creating a rapid closure, *ng*, *k*, and *g* result. The specific consonant depends on whether the soft palate is open, resulting in the nasal consonants *m*, *n*, and *ng*. An oral production of the consonant is produced by raising the soft palate which directs the sound through the oral cavity. If the sound is made with the voice on, we hear the consonants *b*, *d*, and *g*. If the vibration of the vocal cords in the larynx stops during the consonant, we hear the voiceless sounds *p*, *t*, and *k*. These early consonants are usually combined with a single vowel, creating sounds like *bah*, *guh*, and *dih*.

As oral motor skill increases, the child combines several vowels and consonants into consonant-vowel sequences. In the beginning, identical syllables are reduplicated (i.e. *mah-mah-mah* or *goo-goo-goo*). Finally the coordination and timing supports the combination of different syllables (i.e. *bah-bee-boo*, or *bah-gah-dee*). Eventually these consonant-vowel sequences are combined with changes in the voice to

form a type of jargon. Jargon sounds like the child is talking adult sentences without any real words!

Most children develop the consonants used in sound play and speech in a general order of increasing difficulty. The easiest include *m*, *b*, *p*, and *w* [made with the lips] *t*, *d*, and *n* [made with the front of the tongue], and *k*, *g*, *ng* [made with the back of the tongue]. Next come sounds such as *f* and *v* [made with gentle contact of the teeth and lip]. At a later point sounds requiring more midrange grading of tongue, lip, and jaw movement come in. These include *s*, *z*, *sh*, *zh*, *ch*, *j*, *th*, *l*, and *r*. The last to emerge are consonant blends such as *fl*, *st*, *sl*, and *pr*

Each song in the *Marvelous Mouth Music* collection has been given a complexity score for these five areas. The level of difficulty is described as 1 (easy), 2 (moderate), and 3 (difficult). In addition, an overall complexity rating of easy, moderate, or difficult is provided that takes into account the interaction among these areas. These ratings will help parents and therapists select a sequence of songs that fits the needs and abilities of children who are finding their voices with this recording.