



AB's global rehabilitation & educational programs

Child's Name:

Date of Birth:

Early Intervention Professional Name:

Date Received Hearing Aids:

Date of Cochlear Implant Activation:

BabyBeats™

early intervention resource

NOTES



Advanced Bionics

BabyBeats NOTES

BabyBeats NOTES is a quick and easy way of monitoring and recording your child's progress with early listening and communication skills, as you journey together along the four Musical Trails: *Exploring Movement & Music, Instruments, Animal Sounds, and Transportation*.

BabyBeats NOTES guides you through a series of observations to help you recognize what to look for within each musical activity, and explains its direct relationship to the development of your baby's or toddler's early listening and communication skills. The observations are aligned with typically developing milestones for hearing babies aged 3–24 months (see Tools for Toddlers: Using Normal Development Milestones with very Young Children who have Cochlear Implants on the Tools For Schools™ program page at AdvancedBionics.com). Remember, all babies and toddlers develop at different rates and times – it is not a race! Don't worry if your baby is not matching all of the areas – it takes time, patience, and repetition.

The expectations of the number of skills mastered and the rate of progress for children who are fitted with and benefiting from hearing aids will be different, perhaps significantly different, from those children awaiting cochlear implantation. However, you should not be discouraged from using the BabyBeats™ early intervention resource during the period your child is waiting to receive their cochlear implant. In fact, Exploring Movement and Music has been specifically designed to lay the foundation of pre-verbal skills pre-implantation and to support important areas of brain development. It establishes the groundwork so that the addition of the greater auditory aspects of BabyBeats early intervention resource can be utilized once your child's cochlear implant has been activated.

Share BabyBeats NOTES with your early intervention professionals. Enjoy discussing the musical activities you and your baby or toddler have integrated into your daily routine and the progress observed and recorded in their early listening and communication. By using BabyBeats early intervention resource and BabyBeats NOTES as a regular part of your special time and daily routine, you can record your child's experience of the rich world of musical sounds and voice.

Why track listening and communicative behaviors?

Communication is the interaction between two or more people to share experiences, thoughts, feelings, and needs. Babies and toddlers learn to communicate before they learn to talk. Developing pre-verbal skills are vital for later language development. Key pre-verbal skills include: joint attention, copying, turn-taking, and interest in communicating (communicative intent). These behaviors lay the foundation for understanding and expressive communication. Without joint attention, a child may have access to sound through hearing technology but will not be paying attention to learn to make sense of sounds and the speech they hear.

BabyBeats early intervention resource and the developing brain – why is it important?

Music has been found to support the development of the brain, especially for babies (see reference section at the end). A baby with a hearing loss is no different. If your baby or toddler has the appropriate amplification then the more music the better!

In BabyBeats early intervention resource we encourage the development of listening skills to the highest level. Your child will practice separating and discriminating a full spectrum of sound: isolating music from voice, instrumental sounds and animal sounds. Through regular participation in activities using the BabyBeats musical backing tracks your child will experience listening in noisy and challenging conditions. They will listen to your voice, instruments, or recorded animal sounds at the same time as experiencing the complete musical elements of pitch, rhythm, harmony, bass, timbre, dynamics, and tempo – which only music can provide. Your child's brain gets to work on sound awareness, listening and separating all the sounds and their meanings in an amazing, natural process.

How to use BabyBeats NOTES?

In each Musical Trail several Listening and Early Communication skills are developed¹:

		LISTENING SKILLS						EARLY COMMUNICATION SKILLS						
		Sound Awareness	Localization	Discrimination	Identification	Auditory Memory	Sequencing	Auditory Comprehension	Attention	Sustained Concentration	Communicative Intent	Turn-taking	Vocalization	Understanding Language
MUSICAL TRAILS	Movement & Music													
	Instruments													
	Animal Sounds													
	Transportation													

BabyBeats NOTES provides a way to observe and guide your child’s development before and after CI activation. NOTES includes specific observations for each Musical Trail, which highlight the listening and/or early communication skills that will be developed, as well as information about how the activity supports your child’s communicative development. At the back of the booklet, you will find some Notes Pages where you can write down additional information gathered during your child’s journey to hearing.

Recording progress

NOTES provides a tracking sheet with a list of the skills to observe for each Musical Trail. When your child begins using BabyBeats early intervention resource, complete the date of the observation in the baseline column, and tick the box if a skill is present or circle the observation.

At the top of the tracking sheet, there is a ‘Working On’ box that lists different listening and communication skills that you can track with your early

interventionist’s guidance. Each of these skills are numbered and referenced in the observations below.

Use the ‘working on’ box with your early interventionist to guide you on specific listening and communication skills to focus on with your child.

NOTES allows you to make multiple observations, so you can capture the development of your child, both before and after CI implantation. Additional monitoring sheets are available on the website, AdvancedBionics.com.

N = skill Not present D = skill is Developing M = skill is Mastered

NOTES provides an explanation of why the BabyBeats activities are important on the page, “This is important because...”. This page is after the tracking sheet for each Musical Trail. This page helps you to understand the connection between the musical activities and developing early listening, communication and bonding with your child.

¹This chart and monitoring tool is not fully comprehensive, but intended to highlight specific skills that BabyBeats integrates. For the explanation of these skills please see Appendix 1 on the last page of NOTES.

Exploring Movement & Music

WORKING ON:		Baseline	Session 1	Session 2	Session 3	Session 4	Session 5
Listening Skills: Sound Awareness ¹ , Localization ² , Discrimination ³ , Identification ⁴ , Auditory Memory ⁵ , Sequencing ⁶ , Auditory Comprehension ⁷		/ /	/ /	/ /	/ /	/ /	/ /
Communication skills: Attention ⁸ , Sustained Concentration ⁹ , Communicative Intent ¹⁰ , Turn-taking ¹¹ , Vocalization ¹² , Understanding Language ¹³ , Using Language ¹⁴		HA: L / R CI: L / R	HA: L / R CI: L / R	HA: L / R CI: L / R	HA: L / R CI: L / R	HA: L / R CI: L / R	HA: L / R CI: L / R
Tick & date box to identify skill to work on		Observation N D M	Observation N D M	Observation N D M	Observation N D M	Observation N D M	Observation N D M
Date:	My baby or toddler shows interest in my voice and facial expressions as we move together ^{1,3,8}						
	<i>General Comment:</i>						
Date:	My baby or toddler notices when I start and stop singing (eyes widen, stops vocalizing) ^{1,3,8}						
	<i>General Comment:</i>						
Date:	My baby or toddler tries to get my attention by smiling or vocalizing at me ^{10,12}						
	<i>General Comment:</i>						
Date:	My baby or toddler briefly sways or moves (independently) to the music ^{1,8}						
	<i>General Comment:</i>						
Date:	My baby or toddler participates in the activities for a greater length of time ^{8,9}						
	<i>General Comment:</i>						
Date:	My baby or toddler imitates my actions ^{9,11,13}						
	<i>General Comment:</i>						
Date:	My baby or toddler listens to the music and starts to move appropriately when they hear the music - without prompting ^{5,6,9}						
	<i>General Comment:</i>						
Date:	My baby or toddler responds to the music by making their own sounds ^{1,8,12}						
	<i>General Comment:</i>						
Date:	My baby or toddler increases the amount they vocalize while participating in the activity ^{1,8,12}						
	<i>General Comment:</i>						
Date:	My baby or toddler likes to take turns with me copying facial expressions, actions and vocalizing ^{10,11,12}						
	<i>General Comment:</i>						
Date:	My baby or toddler produces a range of high and low sounds (intonation) in response to the music/my singing ^{9,10,11,12}						
	<i>General Comment:</i>						
Date:	My baby or toddler is using more vowel and consonant-like sounds (babble) alongside the music ^{1,3,8,12}						
	<i>General Comment:</i>						
Date:	My baby or toddler echoes part of the words being sung ^{5,9,14}						
	<i>General Comment:</i>						
Date:	My toddler is producing word attempts that are paired to specific movements and music ^{4,5,9,13,14}						
	<i>General Comment:</i>						
Date:	My toddler listens to the music and names the movement to be used with the different music sections ^{4,5,6,9,13,14}						
	<i>General Comment:</i>						

This is important because...

Track 1 | Complete Movement and Music Sequence

Enabling your baby or toddler to hear your voice close to their hearing device is important in developing their awareness of different sounds. The ability to hear sounds that are close by develops before the ability to hear sounds from a distance. Developing communication is not just sound alone. Facial expressions, movement, and touch are a natural way we engage with babies as they begin to be more aware of all people and life around them.

Altering the pitch, dynamics, and rhythmic quality of your voice, using a 'sing-song' voice, will increase your baby's or toddler's awareness and attention to your voice. It can encourage your baby or toddler to listen and imitate your sounds. The music will naturally help you alter the movement, pitch, and dynamic variation in your voice, especially if you do not feel very comfortable doing it. Learning to respond to the presence or absence of sound and voice shows early discrimination of sounds and voice.

Track 2 | Rocking

Rocking together to the music supports attachment and bonding. The rhythm in a lullaby is reassuring and repetitive, increasing confidence in hearing and attending to sound, voice, and movement. Listening and responding through movement to the different tempos and timbre of the music develops listening skills, sustained concentration, and helps your baby or toddler learn that sound has meaning.

Track 1 & 3 | Complete Movement and Music Sequence, Up & Down

Responding to a wide range of sounds will improve when your baby or toddler receives their hearing aids and/or cochlear implants. Watch for changes in your child's response to your voice, like eyes widening, smiling, stilling, laughing, or expression of dislike. Your child is beginning to differentiate between environmental sounds and speech sounds.

Track 1 & 6 | Complete Movement and Music Sequence and Out & In

Musical sounds and high pitched rhythmic music will often elicit babble sounds from babies. This natural response indicates your baby or toddler is hearing and listening and is innately responding to music. They are showing enjoyment in hearing and experimenting with their own sounds.

Track 1 – 6 | Complete Movement & Music Sequence, Up & Down, Creep & Tickle, Running Legs, Out & In

Linking the actions and words (varying the pitch and intonation of your voice) through the structured musical phrases, reinforces the attention and understanding which underpins the development of your baby's or toddler's expressive language. Imitating actions comes before imitating words.

Your baby or toddler will only reflect in their sounds what they hear and experience. Music and particularly singing enables babies and toddlers to experience the widest range of frequencies, encouraging them to hear, listen, and imitate what they hear over time. By vocalizing (babbling), they are naturally exploring pitch and intonation changes with their voice.

Track 2 – 6 | Rocking, Up & Down, Creep & Tickle, Running Legs, Out & In

The ability to retain information and recall through listening is a foundation skill in communication. Repetitive music and movement sequences support this, through the ease of repetition and engagement through the variation of tone, dynamic and phrasing in your voice. The language is fully contextually based, similar to language used in daily routines .

The words used in the pieces directly correlate with the rhythm/prosody of the music. This will reinforce naturally the differences in pattern perception and will support the development of spoken language and clarity in voice production.

Inventing words and movements to match the rhythmic intent and structure of music can support a toddler in listening, thinking, and instigating ideas and language. To enable a baby or toddler to rehearse these skills, music provides the opportunity to repeat, motivate, and guide in their growing communication abilities.

Exploring Instruments

WORKING ON:		Baseline	Session 1	Session 2	Session 3	Session 4	Session 5
Listening Skills: Sound Awareness ¹ , Localization ² , Discrimination ³ , Identification ⁴ , Auditory Memory ⁵ , Sequencing ⁶ , Auditory Comprehension ⁷		/ /	/ /	/ /	/ /	/ /	/ /
Communication skills: Attention ⁸ , Sustained Concentration ⁹ , Communicative Intent ¹⁰ , Turn-taking ¹¹ , Vocalization ¹² , Understanding Language ¹³ , Using Language ¹⁴		HA: L / R CI: L / R	HA: L / R CI: L / R	HA: L / R CI: L / R	HA: L / R CI: L / R	HA: L / R CI: L / R	HA: L / R CI: L / R
Tick & date box to identify skill to work on		Observation N D M	Observation N D M	Observation N D M	Observation N D M	Observation N D M	Observation N D M
Date:	My baby or toddler shows interest in the different instrumental sounds ^{1,3,8}						
	<i>General Comment:</i>						
Date:	My baby or toddler turns to locate the different instrumental sounds ^{1,2,3,8}						
	<i>General Comment:</i>						
Date:	My baby or toddler plays briefly on the instruments with the music tracks ^{1,5,9}						
	<i>General Comment:</i>						
Date:	My baby or toddler plays the instruments for greater lengths of time with the music tracks ^{1,5,6,9}						
	<i>General Comment:</i>						
Date:	My baby or toddler copies me when playing the instrument ^{3,5,6,9,11}						
	<i>General Comment:</i>						
Date:	My baby or toddler changes the way they play the instruments (fast, slow, around & around, tapping) to match the changes in the music tracks – without prompting ^{4,5,6,9}						
	<i>General Comment:</i>						
Date:	My baby or toddler reaches to request an instrument ^{8,10}						
	<i>General Comment:</i>						
Date:	My baby or toddler requests an instrument by reaching and vocalizing ^{8,10,12,14}						
	<i>General Comment:</i>						
Date:	My baby or toddler increases the amount they vocalize while participating in the activity ^{8,9,12}						
	<i>General Comment:</i>						
Date:	My baby or toddler is using more vowel and consonant like sounds (babble) alongside the music ^{1,3,8,12}						
	<i>General Comment:</i>						
Date:	My baby or toddler echoes part of the words being sung ^{5,9,14}						
	<i>General Comment:</i>						
Date:	My toddler is producing word attempts that are paired to specific instruments and music ^{5,10,13,14}						
	<i>General Comment:</i>						
Date:	My baby or toddler recognizes the different sounds of the instruments, without looking at them, and reaches for the correct instrument that was played or named ^{5,7,9,13,14}						
	<i>General Comment:</i>						
Date:	My toddler recognizes the different instruments by their sound, and can name them, without looking at them ^{9,10,13,14}						
	<i>General Comment:</i>						
Date:	My toddler requests an instrument to play by vocalizing/naming the instrument - without seeing the instrument ^{5,10,14}						
	<i>General Comment:</i>						

This is important because...

Unaccompanied Instruments

Your baby or toddler is beginning to show that they are **aware** of the different sounds as they use their HA or CI, through smiling, focusing on the instrument or moving/reaching towards the instrument.

Your baby or toddler is showing the ability to **locate the sound source**. Hearing the different types of sounds and pitch, and locating them can be improved by using bilateral cochlear implants or by having a CI and HA.

Track 7-11 | Ocean Drum, Shakers, Small Drum/Tambourine, Bells, Wind Chimes

Turn-taking is a critical foundation skill for communication. Listening, waiting, and taking your own turn in a conversational process is emphasized and practiced through the musical activities. This can be frequently repeated using all the different instruments.

By playing in short phrases, your toddler is listening to the prosody, phrasing, and structure of the music – which is similar to **listening** to short, repetitive sentences. Initially they hear the prosody, or flow, of the sentence rather than each word. Stopping and starting to sounds encourages attentive listening, and a sense of pattern phrasing. Your toddler is showing you that they **hear the difference** between loud, quiet, fast, and slow sounds. This is the beginning of imitation, a skill that helps children learn language.

Playing and singing is a difficult **coordination** skill for young children. This is developed further by listening and playing in time with the music. It forces the brain to respond in different ways simultaneously. When children are learning language, gestures/movement are combined with vocalizations/words to communicate.

Track 9 | Small Drum/Tambourine

Your baby or toddler is showing greater **attention** for music. Sustained playing is a natural developmental stage in **concentration** and physical coordination. The repetitive, driving rhythm in this piece will support this development; take turns to play to encourage further **joint attention**.

Track 7, 8, & 10 | Ocean Drum, Shakers, Bells

Musical sounds and high pitched rhythmic music will often elicit babble sounds from babies. This natural response indicates your baby or toddler is hearing, listening, and innately responding to music. They are showing enjoyment in hearing and experimenting with their own sounds.

Playing anticipatory games encourages your baby or toddler to **listen, understand, anticipate, and proactively participate**. Leaving the last word off of a familiar phrase then waiting for your baby or toddler to **vocalize** or complete it, is supported by holding the instrument, waiting expectantly, and then playing enthusiastically.

Unaccompanied Instruments & Track 7-11 | Ocean Drum, Shakers, Small Drum/Tambourine, Bells, Wind Chimes

As your baby or toddler learns to **recognize different instrumental sounds** (timbres), it connects to their ability to recognize different sounds, familiar voices, and, for example, the musical quality of their own name. This is because they hear it frequently, both in quiet and noisy situations, spoken softly, loudly, and expressively – like music.

Making choices and expressing preferences is an important stage in your toddler's communication. Follow their lead and develop their **language** further by focusing and talking about what is most interesting to them.

All toddlers like to be in control, and often a reason to communicate will encourage the use of vocalizations/words. Using a word for an instrument and then reaching for that instrument shows that your toddler **recognizes familiar objects**.

This is a real listening challenge, and takes time. The musical game can be repeated in a fun way, allowing you to build on what your child knows and to develop the ability to respond to a complex sound signal (music) by pointing/naming the instrument that was heard. Listening for changes in timbre (instrumental voices) is similar to **listening and discriminating** between different types of voices (spoken timbre). Your toddler is showing you that they can discriminate songs and **identify** the instrument. When your toddler selects an instrument through listening, this is the beginning of **auditory memory**.

Exploring Animal Sounds

WORKING ON: Listening Skills: Sound Awareness ¹ , Localization ² , Discrimination ³ , Identification ⁴ , Auditory Memory ⁵ , Sequencing ⁶ , Auditory Comprehension ⁷ Communication skills: Attention ⁸ , Sustained Concentration ⁹ , Communicative Intent ¹⁰ , Turn-taking ¹¹ , Vocalization ¹² , Understanding Language ¹³ , Using Language ¹⁴ Tick & date box to identify skill to work on		Baseline	Session 1	Session 2	Session 3	Session 4	Session 5
		/ /	/ /	/ /	/ /	/ /	/ /
		HA: L / R CI: L / R	HA: L / R CI: L / R	HA: L / R CI: L / R	HA: L / R CI: L / R	HA: L / R CI: L / R	HA: L / R CI: L / R
		Observation N D M	Observation N D M	Observation N D M	Observation N D M	Observation N D M	Observation N D M
Date:	My baby or toddler notices the difference between the music and silence (smiling, vocalizing, moving & stopping with the music) ^{1,3,8}						
	<i>General Comment:</i>						
Date:	My baby or toddler notices the change between the music and animal sounds ^{3,9}						
	<i>General Comment:</i>						
Date:	My baby or toddler imitates the different actions in time to the music ^{5,6,9}						
	<i>General Comment:</i>						
Date:	My baby or toddler waves/says 'bye bye' as the animals go back into the BabyBeats bag during the music ^{10,14}						
	<i>General Comment:</i>						
Date:	My baby or toddler begins to copy some of the animal sounds or vocalizes to represent the animal sounds ^{6,7,9,12}						
	<i>General Comment:</i>						
Date:	My baby or toddler anticipates the change between the music and animal sounds ^{5,6,9,11}						
	<i>General Comment:</i>						
Date:	My baby or toddler can select the correct animal from a choice of two (looking, pointing, vocalizing, naming) ^{4,5,12,14}						
	<i>General Comment:</i>						
Date:	My baby or toddler can select an animal from a choice of three or more (looking, pointing, vocalizing, naming) ^{5,7,12,14}						
	<i>General Comment:</i>						
Date:	My toddler follows two action instructions in the music section: clap your hands, nod your head – without visual prompting ^{5,6,7,13}						
	<i>General Comment:</i>						
Date:	My toddler finds the correct animal when I have all the animal picture cards lined up, and I say: 'Where is the duck?', 'What does the duck say?' ^{5,6,7,12,13,14}						
	<i>General Comment:</i>						

This is important because...

Track 12 | Animal Sounds

Distinguishing between sound and silence is fundamental to your baby's or toddler's development of **listening** and communication. Your child is showing a **response to sounds** and increasing their **attention** for music. Being fit with hearing aids or cochlear implants will provide a great experience of music, as this piece has rhythmic energy and lots of musical sounds.

Track 12 & 13 | Animal Sounds & My Own Animal Sounds

Learning to **attend** to a voice in quiet and in noise is an important listening skill, which is greatly supported, naturally through music. Your baby or toddler is **recognizing** that your voice is different from other sounds.

Your baby or toddler is turning and **paying attention** to the sound of your voice. Your baby or toddler is **responding** consistently to their own name.

Your baby or toddler is showing you that **sound has meaning**. They are **recognizing** the name of familiar animals.

Your baby or toddler is showing you that they are **making sense of what is heard**. They also **know the difference** between environmental sounds and speech sounds. They are attempting to imitate speech. Making the sounds of the animal is one of the first symbolic associations babies and toddlers make. This is an example of recognition of pattern perception. Your toddler is imitating volume, pitch, and rate (suprasegmentals) and beginning to **use some vowel and consonant sounds** in syllables. Your toddler will also begin to **name the animals**, especially if you frequently repeat the games.

Turn-taking is an important skill in developing two-way communication by practicing **listening, waiting, and responding**. **Imitating words, using single words or word combinations** shows that your baby or toddler is learning to communicate with you.

Children love to listen to favorite songs and stories and play favorite games over and over. After listening to many repetitions, they begin to predict the sequence. As they begin to initiate an animal sound in the music sequence, they are practicing **auditory sequencing**. Encouraging your baby or toddler to take part in predicting what animal sound comes next gives them many opportunities to **use different pitch, loudness, and emotion in their voice**. This further **develops speech** and helps build **auditory sequencing**, which is important to retell stories or recall information.

Track 12, 13, & 14 | Animal Sounds, My Own Animal Sounds, & Horse

Action songs which are used repetitively encourage your baby or toddler to listen, learn, and connect the action and the word. This is a natural and effective process for developing language. Music allows you to repeat more frequently as it is motivating, engaging, and fun! Imitating actions comes before imitating words.

The music allows you to add your own sounds and actions, thus is a great way of extending language as your toddler increases their vocabulary. You are helping your toddler identify what they heard, and remember what action they are supposed to do. You can make it more challenging by giving longer directions and see if your toddler can do it in the right order! This increases their **auditory memory** for words. As your toddler shows understanding for single words, begin to combine words during item selection activities. For example, use two words, "Find the duck and the monkey" or "Make the frog jump".

The ability to listen and recall one, two, or more pieces of information links directly with memory. As your toddler begins to understand more language, you can challenge them to remember two, then three words. Remembering the order of what you heard (auditory sequencing) is an important skill. This is the beginning skill of following directions and later retelling stories.

Exploring Transportation Sounds

WORKING ON: Listening Skills: Sound Awareness ¹ , Localization ² , Discrimination ³ , Identification ⁴ , Auditory Memory ⁵ , Sequencing ⁶ , Auditory Comprehension ⁷ Communication skills: Attention ⁸ , Sustained Concentration ⁹ , Communicative Intent ¹⁰ , Turn-taking ¹¹ , Vocalization ¹² , Understanding Language ¹³ , Using Language ¹⁴ Tick & date box to identify skill to work on		Baseline	Session 1	Session 2	Session 3	Session 4	Session 5
		/ /	/ /	/ /	/ /	/ /	/ /
		HA: L / R CI: L / R	HA: L / R CI: L / R	HA: L / R CI: L / R	HA: L / R CI: L / R	HA: L / R CI: L / R	HA: L / R CI: L / R
		Observation N D M	Observation N D M	Observation N D M	Observation N D M	Observation N D M	Observation N D M
Date:	My baby or toddler seems to enjoy moving/doing actions with me to the music for the different vehicles ^{3,8,9,11}						
	<i>General Comment:</i>						
Date:	My baby or toddler turns to look when they hear the sound of the vehicle ^{1,2,3,4,8,11}						
	<i>General Comment:</i>						
Date:	My baby or toddler imitates the symbolic sounds for the different vehicles (brrmmm, beep, whooo whoo aahh) ^{5,6,7,10,11,12}						
	<i>General Comment:</i>						
Date:	My baby or toddler copies the actions, as we sing and move together ^{5,6,9,10,11,12,13,14}						
	<i>General Comment:</i>						
Date:	My baby or toddler makes the symbolic sounds for vehicles without prompting ^{5,10,11,12,13}						
	<i>General Comment:</i>						
Date:	My baby or toddler listens to the music and starts to move appropriately to the different musical pieces (faster/slower, starting/stopping) - without prompting ^{4,5,6,9}						
	<i>General Comment:</i>						
Date:	My toddler listens to and recognizes the music by selecting from two, three, or four vehicles/vehicle cards ^{3,4,5,6,7,9}						
	<i>General Comment:</i>						
Date:	My toddler gives me the correct vehicles/vehicle cards in the order they were requested ^{4,5,6,7,9,13}						
	<i>General Comment:</i>						
Date:	My toddler names the vehicles and requests the one they want from a choice ^{4,5,6,10,14}						
	<i>General Comment:</i>						
Date:	My baby or toddler and I have used the music when reading a transport story together ^{5,6,7,9,11,13,14}						
	<i>General Comment:</i>						

This is important because...

Track 15, 16, & 18 | Car, Train, & Bike

Waiting for your baby or toddler to instigate the movement shows they are aware of the pitched sounds and **understand** the changes in the tempo and timbre. Your child is showing you that they can **pay attention longer** and **tell the difference** between fast and slow music (early discrimination).

Track 17 | Boat

Your child is beginning to **practice vocal control**, **experiment with sounds**, and **learn to produce sounds** in one breath. The music helps to support this stage through the predictable, repetitive rhythm, phrasing, and impetus for making a sustained sound through long, breath control. Babies enjoy **hearing their voices**.

Encourage your baby or toddler to use their voice by humming or singing along to the music. Your child is developing their **auditory feedback loop** by listening to your voice, processing what was heard, and trying to reproduce what was heard. Your child is **developing speech sounds**, using vowel sounds first and then combinations of vowel and consonant syllables with varied intonation.

Track 15 - 19 | Car, Train, Boat, Bike, Airplane.

Sound-object association is the beginning of **understanding** what is spoken. Your baby or toddler will begin to listen and know the meaning of the sounds, especially simple symbolic sounds like a car. Linking this to movement reinforces the meaning of the sound and the experience of the car. The short pieces allow you to practice this activity many times. Repetition helps learning **language** and meaning. Your child may search to find where the sound is coming from, which is the beginning of **sound localization**.

Your child is initiating communication with you. They are practicing vocalizations and practicing making vowel and consonant sounds. Imitating the sounds your baby or toddler makes encourages them that they are talking to you and you understand them. It shows your child that talking is FUN, and you are listening to them. Pairing actions with vocalizations is an early communication skill. **Imitating** sounds helps your child develop their **auditory feedback loop**, which is important in **learning to speak** clearly.

You can help expand your toddler's **auditory memory** by offering a choice in a closed set of two or more items or pictures. You can challenge your toddler and ask them to give you items or pictures in the correct order. Giving your toddler plenty of opportunities to choose, encouraging them to name what they want will help to develop your child's communication. All toddlers like to be in control, and often a reason to communicate will encourage them to do it quicker!

Your toddler is showing you new words in their vocabulary. They are **naming items and using more vowels and consonants** in words, making it easier to understand what they are saying. You might notice your child is able to answer simple, "Where is..." or "What is..." questions. When your toddler requests vehicles, they are beginning to **use simple sentences** with two or three words!

Additional Notes

Additional Notes

Appendix A Definitions

LISTENING SKILLS

Adapted from: Erber, N. (1982). Auditory Training. Washington DC: Alexander Graham Bell Association, pp. 92-94.

Sound Awareness: A child's ability to hear and respond to the presence or absence of sound. Infants respond to sound by turning their head, vocalizing, crying, moving, or changing their facial expressions.

Localization: A child's ability to locate a sound and look or turn to where the sound is coming from.

Discrimination: A child's ability to hear that sounds or words are the same or different.

Identification: A child's ability to point or name the sound that is heard.

Auditory Memory: A child's ability to remember sounds or words that were given verbally.

Auditory Sequencing: A child's ability to remember a sequence of sounds or words and recall them in the order that they were presented.

Auditory Comprehension: The child's ability to detect, discriminate, identify and understand the meaning of sounds or messages.

EARLY COMMUNICATION SKILLS

Attention: A child's ability to 'tune in' to sounds and voices and react to sounds and voices by looking at a speaker's mouth and eyes and/or moving in response to a speaker's voice.

Sustained Concentration: A child's growing ability to control their attention to focus on objects, sounds, and voices that are interesting in quiet and distracting environments.

Communicative Intent: A child's ability to communicate wants or needs using eye gaze, reaching, pointing, vocalizations, or words.

Turn-taking: The back and forth exchange between a child and caregiver that may be gestures, actions, vocalizations, or words.

Vocalizations: A child's ability to make a sound with their voice. Early infant vocalizations include crying, laughing, grunting, cooing, raspberries, clicks, squeals, etc. These sounds may include vowel-like sounds and consonant-like sounds but are not true syllables.

Understanding language: A child's ability to understand what is being said to them.

Using language: A child's ability to use words and sentences to communicate wants and needs to others.





References

1. Bonne R, Cunningham J. Children's expression of emotional meaning in music through expressive body movement. *J Nonverbal Behav* 2001;25: 21–41.
2. Dolgin K, Adelson E. Age changes in the ability to interpret affect in sung and instrumentally presented melodies. *Psychol Music* 1990;18:87–98.
3. Francois C, Schön D. Musical expertise boosts implicit learning of both musical and linguistic structures. *Cereb Cortex*. 2011 Oct;21(10):2357-65.
4. Hargreaves D. The development of artistic and musical competence. In: Deliege I, Sloboda J, eds. *Musical Beginnings*. Oxford, UK: Oxford University Press; 1996:145–170.
5. Papousek M. Intuitive parenting: a hidden source of musical stimulation in infancy. In: Deliege I, Sloboda J, eds. *Musical Beginnings*. Oxford, UK: Oxford University Press; 1996:88–112.
6. Patel, A.D. Language, music, syntax and the brain. *Nature Neuroscience* 2003;6(7):674-681.
7. Jentschke S, Koelsch S, Sallat S, Friederici AD. Children with specific language impairment also show impairment of music-syntactic processing. *J Cogn Neurosci*. 2008 Nov;20(11):1940-51.
8. Phillips-Silver J, Trainor L. Feeling the beat: Movement influences infant rhythm perception. *Music Percept*. 2010 September; 28(1): 3–14.
9. Shenfield T, Trehub S, Nakata T. Maternal singing modulates infant arousal. *Psychol Music* 2003;31:365–375.
10. Trehub SE. The developmental origins of musicality. *Nat Neurosci* 2003;6:669–673.
11. Tsang C, Trainor L. Spectral slope discrimination in infancy: sensitivity to socially important timbres. *Infant Behav Dev* 2002;25:183–194.
12. Welch G. The musical development and education of young children. In: Spodel B, Saracho O, eds. *Handbook of Research on the Education of Young Children*. Mahwah, NJ: Lawrence Erlbaum Associates Inc.; 2006:251–267.
13. Winkler I, Kushnerenko E, Horvath J, et al. Newborn infants can organize the auditory world. *Proc Natl Acad Sci USA* 2003;100:11812–11815.



AB's global rehabilitation & educational programs



Advanced Bionics AG

Laubisrütistrasse 28, 8712 Stäfa, Switzerland

T: +41.58.928.78.00

F: +41.58.928.78.90

info.switzerland@AdvancedBionics.com

Advanced Bionics LLC

28515 Westinghouse Place

Valencia, CA 91355, United States

T: +1.877.829.0026

T: +1.661.362.1400

F: +1.661.362.1500

info.us@AdvancedBionics.com

For information on additional AB locations, please visit

AdvancedBionics.com/contact

AB - A Sonova brand