

Articles | Creating Music for Babies

By Dorothy Lockhart Lawrence

Creating Music for Babies™ has been in the back of our minds since the early beginnings of Advanced Brain Technologies, LLC. Using music as a means to maximize human potential has been a useful and powerful tool for our collaborators, the National Academy for Child Development, for over 25 years. So it was natural for both of us to want to develop a product that would promote neurological development for the very young.

A primary objective for this project was to help prevent auditory-based learning, attention, and developmental problems in young children. Our development team included experts from the fields of neurodevelopment, child development, education, music, music therapy, sound engineering, and recording. Members of the team were already using, and some had also helped to develop, Tomatis-based sound stimulation programs, including The Listening Program™, and Sound Health.

Our concept was to create a series of CDs for babies that would provide natural, acoustic, full spectrum sound (20-20,000 Hz) to provide quality auditory stimulation. As with The Sound Health Series, we also wanted to provide a beautiful way to mask the "toxic noise" that is present in nearly every home and childcare center today, a very real threat to hearing health.

"The act of hearing itself influences the quality of auditory development," says Lise Eliot, Ph.D. in *What's Going On In There?* Her book explains how the brain and mind develop in the first five years of life. All the listening babies do, including in the womb, shapes the way their brains become wired to process and understand different sounds. Eliot goes on to say that this development is not just limited to the auditory system, but that "children's early experience with speech and music are tremendously important in shaping many higher aspects of brain function, including emotion, language, and other cognitive abilities."

To start our process, we purchased and reviewed every CD released for babies that could be found. Our team discussed the various approaches that others had taken. It was determined that there was a gap in the market that we could fill with our particular expertise and approach.

At the same time, we reviewed books, articles and research studies on music and babies, the influence of sound and music on prenatal development, infant hearing, etc. Our Music Director, Richard Lawrence, reviewed hundreds of compositions for babies and children. He wanted to select musical compositions that were written for or would especially appeal to very young ears. To further this appeal he would arrange the music and select instruments to compliment the compositions, provide a full sound spectrum, and be enjoyable for both babies and parents.

Working with co-producer Alex Doman, selections were made in the areas of classical, folk music, and nursery rhymes. Lullabies from many cultures, including French, English and Welsh, were included to help a child fall asleep. For playtime and creating a happy mood, they selected a number of pieces that Mozart wrote when he was a little boy. He began composing at the age of 4 and his compositions as a child were simple, bright, and happy. Both producers agreed that harp, celeste, violin, viola, cello, clarinet, and flute would be good choices for the arrangements.

The celeste is not a common instrument but you might have heard this charming sound at Christmas time listening to "Dance of the Sugar Plum Fairies" from *The Nutcracker* by Tchaikovsky. The celeste looks like a small piano and sounds like a glockenspiel but the hammers have felt on them to soften the sound.

Award winning members of the Arcangelos Chamber Ensemble were called on to play. A goal of the recording sessions would be to create a low stress environment to produce the most expressive, gentle and effective recordings possible for babies. A firm believer that intention plays a crucial role in effectiveness, Richard Lawrence asked all the musicians involved in the recording to bring along a photograph of their own child or a child they felt close to. He had gotten the idea from a research study that showed a listener could tell from a recording if a mother was singing with their infant present or was singing the same song without the infant in the room. The researcher concluded that there is a distinctive style of singing to infants. Richard wanted to reproduce this distinctive style instrumentally in our recordings.

Since bringing babies to the recording sessions would not be feasible, the photographs would provide a strong focus for lengthening the notes, for making the music slow and sweet. During the recording sessions, Richard reminded the musicians to look at the photographs they brought and imagine that the child was there in the studio. They were asked to play as gently as they would for their own babies.

Flutist Vivian Stanley was delighted with this idea. Her second pregnancy had resulted in triplets - three little boys who were in intensive care for many weeks. Vivian had gone to the hospital and played her flute for them. She and her husband also sang to them and when they weren't there, the tiny boys heard a recording of flute and guitar music that Vivian had made. With music, "the numbers on the apnea, bradycardia and blood oxygen monitors would settle to normal," she said. "These were some of the soothing sensations the boys longed for." So Vivian knew from experience that music could be a powerful healing force for children.



Left to right: Alex, Evan, Nicholas and Sebastian Stanley

Violinist Ingrid Sweeney was pregnant with her second child. She brought along a picture of her son Micah as a toddler. As she played and looked at the picture she went back to the time when he was starting to crawl and to walk. "My playing definitely changed," she told us. "It also changed when I felt the baby inside me move. When she woke up and kicked, I felt I was interacting with her as I played." Ingrid told us that now little Hannah Rose loves to listen to her play the violin.

Pianist Larry David who played the celeste for the recordings, talked about how there is always a certain amount of stress when you begin a recording session. When he started to improvise with Richard, (violinist as well as Musical Director) it started out slow. Then at one point Larry looked up at the picture of himself holding his son Michael when he was just a few days old. He suddenly caught the mood for the project and everything changed. "I was amazed," he told us. "From that point on I made a point of dwelling on the picture when I wasn't reading the music." Larry told us it helped him to be in the right frame of mind, to relax, and to connect with the intention and spirit of the recording session.

Sarah Vornoy is a licensed Psychotherapist, a new mom, and has often played her harp in hospital settings. She told us, "I had my son Ben's picture in front of me while I was playing. It can't help but affect you when that is your focus. It's probably the most relaxed session I've ever participated in. It's so fun and easy to get a great sound when playing in this realm. Many thanks for allowing me to be a part of this project which is meaningful and inspiring."

Our next step was to create segments of music that could be used for a national field test. The purpose of the test was to evaluate the effectiveness of our music produced with different concepts. The evaluation would be based on behavioral and observational checklists and data collection. In less than two weeks we had 150 families and clinics who wanted to be part of our test.

While the music was being edited and the sample CDs produced, a group of mothers were brought in with their babies as a focus group for early feedback. One at a time, mothers and babies came in and listened to two, five-minute samples of music. They then shared their observations and rated the effectiveness of the music on their child. One child fell asleep although it was far from her normal nap time, another put her doll to bed on hearing the lullabies. All mothers wanted the music as soon as possible!

Following the focus group, more decisions were made about options in the field test. Music for going to sleep would be tested with heartbeat added to the music, another with evening nature sounds added, and another section with music alone. Data was collected for a 14-day period. Music with or without heartbeat and nature sounds was a highly personal choice, giving conflicting data for and against. Our option to use music only was generally preferred and test data showed that the music was not more effective with heartbeat or nature sounds. Written feedback, data, and testimonials all concluded that our music was very effective.

The music had been carefully selected and arranged so that it could be divided into the categories of Sleepy, Peaceful, Cheerful, and Playful. The desired effort for each album suggested further musical treatment.

Four psychoacoustic treatments were utilized in Sleepy Baby™. The volume softens track by track from the beginning selection to the end. This helps the child settle down and drift off to sleep. It also means a parent can simply leave the music on and not be concerned about turning off the CD player when the baby goes to sleep. The tempo gradually slows from a range of 70-40 beats per minute to encourage the baby's systems to slow down. Third, the frequency range of notes progressively gets lower. For example, a clarinet and viola are used in the arrangements for Sleepy Baby to enrich lower frequencies. And fourth, the music sounds progressively farther away. Combining these mellow sounds and treatments helps to produce a calming and restful feeling and helps to induce sleep.

Peaceful Baby™ contains very delicate and beautiful music to help calm and relax a little one, creating an environment for a more peaceful mood. As with Sleepy Baby, relaxing improvised melodies were used. Prior experience has shown that improvised playing encourages a deeper brain wave state in the performer that extends to the listener as well. Slower tempos and rhythms of 50-90 beats per minute were selected to encourage entrainment. Instruments on this album include harp, strings, flute and celeste, all played gently to have a calming effect. Additionally, a treatment called frequency equalization was used to remove any high frequencies that might alert or startle a child. Pieces such as Baa! Baa! Black Sheep, Lambs Are Sleeping, and the Gaelic Cradle Song were arranged to engage a child's attention and gradually slow down body rhythms to a peaceful state.

Cheerful Baby™ was produced to help improve a baby's mood. This album has a more upbeat tempo with 60-120 beats per minute to energize brain function. Instruments were used and arrangements were created for their effect on alertness. A rich spatial environment has been created not only to develop listening abilities, but to encourage the development of other senses as well. Subtle, unexpected arrangements and sound that moves from side to side, stimulates active listening. Music selected for this album has a rich, full spectrum sound, particularly in the higher frequencies that are known to charge the brain.

Playful Baby™ became an opportunity to stimulate listening in an expanded way, with a variety of sounds that compliment the music. When you hear "Baa, Baa, Black Sheep" you will also hear the sound of a lamb. On Bizet's Gallop, you will also hear the sound of horses' hooves with the sound going from one side of the room to the other as the horses gallop past. And yes, that's a real Cuckoo you are hearing in the Toy Symphony! The variety of sounds woven in with the music, ranging from 80-140 beats per minute, is designed to stimulate active listening. In addition the sounds and instruments are continually moving from side to side to develop spatial awareness.

Now that you know what went into creating the Music for Babies series, you know why we say with confidence that this is more than music. Just as food nourishes a baby's growing body, the elements of music - melody, tone and harmony - foster the brain growth crucial to healthy young minds. By playing Music for Babies, you as a parent or caretaker can actively support optimum brain development. You can build a strong foundation for later learning, language development, and music ability to help each child achieve their extraordinary, and unique potential.

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