

The Sound of Healing

Music as Medicine

By Lisa Winer, WebMD Feature
Reviewed By Craig H. Klinger

Nov. 13, 2000 -- Sara Cowell was born 12 weeks early, and weighed just 2 1/2 pounds. Thought to have suffered from brain damage, as a baby she neither cried for her mother nor responded to the voices of others. And as she grew into a toddler she failed to learn to speak and was terrified of people she didn't know. By the time she was 3, doctors had diagnosed her as having significant developmental delay.

But while Sara (not her real name) had a lot of trouble with words, she loved to sing out sounds around the house, and in fact seemed to have perfect pitch. And since she wasn't making much progress in speech therapy, her parents asked about music therapy. Their speech therapist suggested they give it a try.

Soon Melinda Mansfield, MMT, MT-BC, was visiting Sara at her home, where the two played classical music and blew bubbles. They would sit together on the floor, each with a drum; Mansfield would bang out a rhythm on the drum and get Sara to play with her. Sometimes, she would sing to Sara, stopping before the last word in the verse. Quietly, with no one looking at her, Sara would sing the last word.

"Melinda slowly and methodically drew her out -- getting her to have fun with people," says Sara's mother, Karen.

Music turned out to be the way into Sara's world. It helped a child who previously couldn't express herself through language learn that words had meaning and that she could use them to communicate.

Long recognized as a powerful means of stirring emotion and easing communication, music therapy is today gaining wider use. Not only is it helping children like Sara learn to express themselves, it's also soothing the pain of mothers delivering babies, easing communication with depressed and anxious patients, and helping stroke victims relearn language. And the more researchers learn about the workings of the brain, the more they are encouraged that music can be harnessed to assist in patient recovery.

Rhythms of the Brain

"Neurologic music therapy is effective," says Michael Thaut, PhD, a professor of neuroscience and music and music therapy at Colorado State University. "I've seen the data and it works." Thaut is using rhythm to help stroke and Parkinson's disease patients retrain their ability to control their arms and legs. "The evidence suggests that we will also see applications of music to retraining attention and memory," he says.

Scientists say they have a lot to learn about why children like Sara respond so well to music therapy. However, what they know so far of the flexibility of the brain has them excited about the prospects.

It appears that the pattern of connections in the brain is continually changing, says Joseph Arezzo, PhD, a professor of neuroscience and neurology at the Albert Einstein College of Medicine in New York. These changes are in large part thought to be driven by the brain activity itself.

The complex, repetitive, and mathematical qualities of music make it a compelling stimulus for the brain. "There may be intrinsic rhythms in the brain," Arezzo says. "Music may tie into that rhythm in some way."

Patients exposed to lullabies of a certain tempo can learn to synchronize their heart rates with the music, according to a study published in the June 1999 issue of a German journal, *Ambulanz fur Hamatologie und Onkologie*. And a review of the research on music therapy published in the 1999 issue of the *Annual Review of Nursing Research* concludes that music is an effective pain reducer and performance and mood enhancer.

"I think in the next few years there will be some exciting research into the unique features of music and the brain," says Arezzo. Sophisticated imaging techniques like MRI and PET scans should help Arezzo and his colleagues actually observe changes in people's brains as they listen to or perform music.

Meanwhile, Sara, now almost 4, just finished her sixth month of working with her music therapist. Today, she speaks in four- and five-word sentences, makes eye contact with other people, and plays ball with the kids at day care. Her parents couldn't be more thrilled. "I don't know if she'd be talking right now if it weren't for the music therapy," says her mother. "It has improved the quality of her life 1,000-fold."

Lisa Winer is a former assistant editor at WebMD.