

# Music Therapy May Aid Brain-Damaged Patients

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A review of the evidence to date suggests that music [therapy](#) can help patients recover their movements after experiencing brain damage. Brain damage can affect movement and language abilities, having a significant impact on quality of life. Patients may have had [trauma](#) to the head, damage following brain surgery, or a stroke. An estimated 1.5 million people in the U.S. sustain a traumatic brain injury each year, of whom 80,000 to 90,000 will be left with long-term disability.

Dr. Joke Bradt of the Arts and Quality of Life Research Center at Temple University in Philadelphia, Pa., carried out a Cochrane Systematic Review of music in recovery from brain injury. She explains that the restoration of motor function is a primary concern, because improvements “directly affect the level of independence of the patient related to activities of daily living.”

Music therapists use techniques that aim to stimulate brain function controlling movement, cognition, speech, emotions and the senses. It is hoped that such therapies may also prevent [depression](#). Methods range from rhythmic auditory stimulation (RAS), which connects rhythm and movement, to singing, and the use of music listening, music improvisation, and composition.

Listening to music is often encouraged in rehabilitation settings, but Dr. Bradt says it is important to distinguish this from music therapy interventions, as music therapists have specific clinical training and the approach is “underpinned by music therapy theory.”

Her research team reviewed seven studies involving 184 patients. All were controlled studies, meaning they compared music therapy against standard care. Four studies used

stroke patients only; the remainder included other brain-injured patients. Many studies were too small to lead to statistically significant results, and were designed too differently to compare.

RAS therapy, used in three of the stroke-only studies, improved walking speed by an average of 14 meters per minute, compared to standard movement therapy. It also helped patients to take longer steps and improved arm movements, such as elbow extension.

The review states, “RAS may be beneficial for improving gait parameters in stroke patients, including gait velocity, cadence, stride length and gait symmetry. These results are encouraging, but more trials are needed before recommendations can be made.” It adds that the results agree with findings from non-controlled trials that there may be a beneficial effect of RAS.

Dr. Bradt said, “This review shows encouraging results for the effects of music therapy in stroke patients. As most of the studies we looked at used rhythm-based methods, we suggest that rhythm may be a primary factor in music therapy approaches to treating stroke.”

But the evidence is “limited” for other music therapy techniques. Listening to live and recorded music was used with the aim of improving speech, behavior and pain in brain injured patients, but several of these trials had fewer than 20 participants.

At present, “recommendations linking specific interventions to specific neurological damage cannot be made,” the review states. But “as most of the included studies successfully improved motor outcomes with rhythm-based methods, we suggest that rhythm may be a primary factor in music therapy methods facilitating functional gains with this population.”

It concludes, “Research efforts need to focus on conducting music therapy trials with high quality designs, as well as including the effects on mood and emotions, social skills and interactions, and activities of daily living.”

Other studies looking at the effects of music therapy have concluded it “may” be useful for [cancer](#) patients, those who need mechanical ventilation, people with coronary heart disease, and patients in end-of-life care.

Dr. Bradt says, “I think it’s definitely worth offering to patients to see if it works for them.” In contrast to [anxiety-reducing medications](#), she says, music therapy comes with almost no risk of adverse side effects and is cheaper.

Commenting on her study of cancer patients, Dr. Bradt pointed out that music may distract people from pain or anxiety about [cancer treatment](#) side effects, and the right piece of music can relax patients. It can also help patients communicate with their families. “In a music therapy session, you may be able to select a song you feel would express perfectly what you’re trying to say,” she said.

Engaging in music making can also be empowering. “This is important as patients may feel victimized by their cancer,” she added.

## **References**

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[http://www.temple.edu/boyer/ResearchCenter/documents/MTforABI\\_publishedreview.pdf](http://www.temple.edu/boyer/ResearchCenter/documents/MTforABI_publishedreview.pdf)

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