

# Music as medicine

Research shows that using music as medicine can reduce pain, ease anxiety and even reverse brain damage.

Most of us have listened to music for motivation, relaxation or inspiration. But few people realize just how powerful this auditory stimulus can be. Since ancient times, music has served as a healing tool for both body and mind. Now, studies show that music may be an effective treatment for conditions as varied as heart disease, depression and stroke.

Among the latest is a review of 23 trials, involving nearly 1500 participants, of music in the treatment of coronary heart disease. Each patient randomly received standard care with or without music therapy.

The findings included beneficial effects on blood pressure, heart and respiratory rates, and anxiety and pain as a result of music therapy. In most cases, this involved listening to prerecorded music plus the routine care. Whether a trained music therapist could elicit further benefits remains to be seen (*Cochrane Database Syst Rev*, 2009; 2: CD006577).

This study adds to a growing body of evidence that music can be used in a variety of medical settings. Its anxiety- and pain-reducing effects can help cancer patients, those undergoing surgery, and adults and children alike (*South Med J*, 2005; 98: 282-8).

In one remarkable study, listening to music proved to be just as effective

as sedatives in relieving the anxiety of 207 patients before an operation. The researchers found no significant differences in anxiety, cortisol level, heart rate and blood pressure between those taking diazepam and those who listened to music in the run-up to surgery (*Rev Esp Anestesiol Reanim*, 2007; 54: 355-8).

In a review of several trials by scientists from Stanford University, music therapy was reported to be effective for the chronic, often debilitating, pain experienced by cancer patients. By reducing anxiety, listening to music indirectly lessened pain intensity and, so, improved the patients' quality of life (*Hawaii Med J*, 2007; 66: 292-5).

## Music and the brain

Perhaps the most exciting music-as-medicine research is the recent evidence suggesting a role for music in stroke rehabilitation.

According to a study carried out in Helsinki, Finland, listening to music for a few hours every day can boost cognitive and emotional recovery in the early stages following a stroke.

The researchers compared the recovery of 60 stroke patients who listened daily to either music of their choice, audio books or nothing at all over a period of two months. In addition, all of the patients received



the usual standard medical care and rehabilitation.

The results showed that the recovery of verbal memory and focused attention (ability to control and perform mental operations, and resolve conflicts) improved significantly more with music than with audio books and nothing at all. The music group also felt less depressed and confused than the no-music group. These differences were still present six months later, suggesting that music may have long-term effects on brain function and mood (*Brain*, 2008; 131: 866-76).

Another compelling study looked at the effects of music on three stroke patients who had lost half their field of vision, a condition known as 'visual neglect'. The patients completed tasks under three conditions: while listening to music they liked; while listening to music they didn't like; and in silence. While listening to music of their choice, all patients were able to much more accurately identify coloured shapes and red lights on the depleted side of their visual field (*Proc Natl Acad Sci U S A*, 2009; 106: 6011-6).

The precise mechanisms behind these effects are still unclear, but one possibility is that music directly stimulates recovery in damaged areas of the brain. Another theory is that the positive emotions elicited by music may result in more efficient brain neuronal signalling. Although more research is needed, a number of experts are now recommending everyday music listening as a valuable addition to the care of stroke patients.

As for the rest of us, it seems that any type of music can be beneficial—as long as we like it. Indeed, listening to our favourite music may be an effective way to ease the anxiety and stress of these tough economic times.

Joanna Evans

## Other applications of music

- ◆ **Multiple sclerosis.** Music offers a variety of psychosocial and emotional benefits to MS sufferers, including improvements in self-acceptance, anxiety and depression (*Expert Rev Neurother*, 2006; 6: 469-77).
- ◆ **Depression.** Compared with controls, depressives treated with music therapy performed significantly better on standardized tests of depression, distress, self-esteem and mood (*J Gerontol*, 1994; 49: P265-9).
- ◆ **Insomnia.** In a small study of 15 people, music relaxation was better than muscle relaxation for improving sleep (*J Music Ther*, 2008; 45: 360-80).
- ◆ **Schizophrenia.** Music therapy added to standard care was superior to standard care alone for patients with schizophrenia (*Cochrane Database Syst Rev*, 2005; 2: CD004025).
- ◆ **Alzheimer's disease.** Music therapy can significantly reduce anxiety, depression and aggressiveness in Alzheimer's patients. It has also allowed access to memories that were previously lost (*Encephale*, 2009; 35: 57-65).